

THE *Soybean Digest*

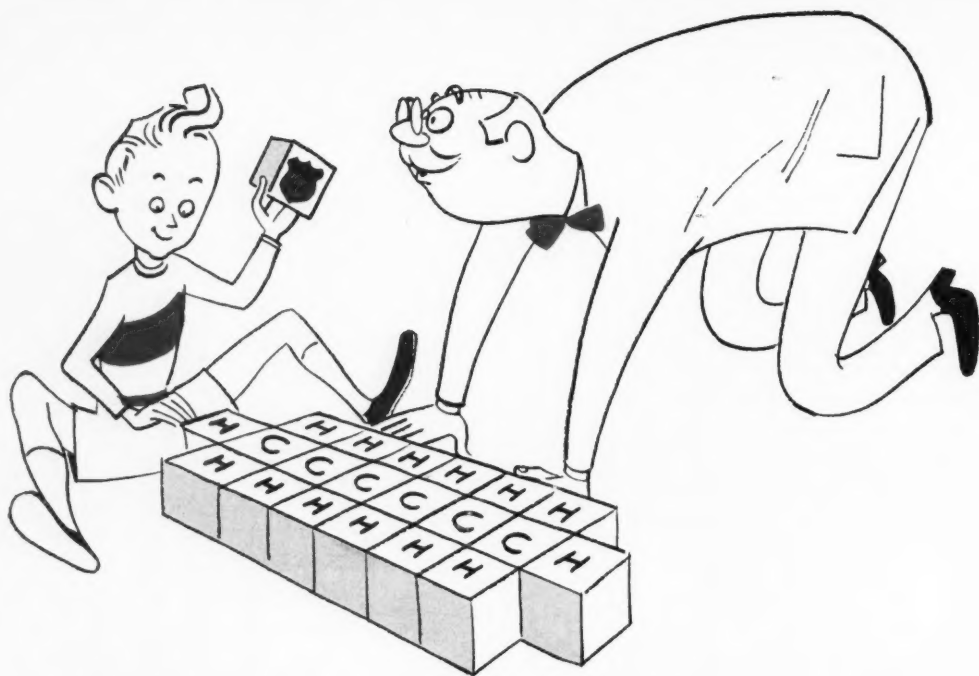


Record Run at Hemphill Soy Products Co.

Official Publication
AMERICAN SOYBEAN ASSOCIATION

VOLUME 11 • NUMBER 11

OCTOBER • 1951



How To "Build" a Good Solvent...

EVERY CHEMIST knows you've got to start out with the right combination of carbon and hydrogen atoms in your molecule. And it takes careful processing, every step of the way, with

strict product controls, to assure a high-quality, uniform solvent like Phillips 66 Normal Hexane.

Pure, colorless Phillips Hexane leaves no taste or odor in your meal or oil. Outstandingly narrow boiling range, too. Typical spread only 5°! No light ends. Leaves no heavy residue in the meal.

You can count on Phillips, the world's largest producer of hexane, for adequate supplies of Phillips 66 Hexane and other superior hydrocarbon solvents. Rely on Phillips, too, for prompt, dependable deliveries.

Write for complete information about Phillips 66 Solvents for soybean, cottonseed, flaxseed, tung nut, rice bran, corn germ, castor bean, alfalfa, animal fat and other extraction industries.



PHILLIPS PETROLEUM COMPANY

BARTLESVILLE, OKLAHOMA

THE Soybean Digest

REG. U. S. PAT. OFF.

HUDSON, IOWA

Business, publication and circulation offices, Hudson, Iowa. Editor, Geo. M. Strayer. Managing Editor, Kent Pellett. Business Manager, Geo. McCullay. Director of Circulation, Gene Taylor.

Advertising representatives: Ewing Hutchison Co., 35 E. Wacker Drive, Chicago 1, Ill.

Vol. 11

OCTOBER * 1951

No. 12

Published on the 10th of each month at Hudson, Iowa, by the American Soybean Association. Entered as second class matter November 20, 1940, at the postoffice at Hudson, Iowa, under the Act of March 3, 1879. Forms close on 25th of month preceding. Subscription price to association members, \$2.50 per year; to non-members, \$5.00 per year; Canada and other members of the Pan-American Union, \$3.50; other foreign, \$4.00.

IN THIS ISSUE

	Page
Editor's Desk	4
Growers	6
Dr. Sure Makes Low-Cost Food	9
MARIE L. LAVALLARD	
Soybean Oil Meal in Manufactured Feeds	10
C. K. SHUMAN	
Soy Flour for the Export Market	12
E. A. BUELENS	
What the South Is Going to Do with Soybeans ..	14
C. DALE HOOVER	
Factors Affecting Flavor Stability of Soybean Oil	16
SOYBEAN RESEARCH COUNCIL	
October Crop Report	20
Letters	24
Publications	26
Grits and Flakes	30
Washington Digest	34
WAYNE DARROW	
Market Street	35
In the Markets	36
Index to Volume 11	41
Index of Contributors	42

THE AMERICAN SOYBEAN ASSOCIATION

OFFICERS: President, Chester B. Biddle, Remington, Ind.; Vice President, Jake Hartz, Jr., Stuttgart, Ark.; Secretary-Treasurer, Geo. M. Strayer, Hudson, Iowa.

DIRECTORS: Jake Hartz, Jr., Stuttgart, Ark.; C. G. Simcox, Assumption, Ill.; Albert Dimond, Lovington, Ill.; LeRoy Pike, Pontiac, Ill.; Ersel Walley, Fort Wayne, Ind.; Chester B. Biddle, Remington, Ind.; Geo. M. Strayer, Hudson, Iowa; Howard L. Roach, Plainfield, Iowa; John W. Evans, Montevideo, Minn.; Herbert H. Huddleston, Lamont, Miss.; Henry I. Cohn, Sr., St. Louis, Mo.; O. H. Acom, Wardell, Mo.; Calvin Heilman, Kenton, Ohio; David G. Wing, Mechanicsburg, Ohio; and R. H. Peck, River Canard, Ontario, Canada.



Newly

Designed

Non-breakable

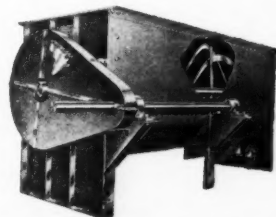
TROUGH ENDS

These trough ends are made of plate steel bodies with inter-changeable and detachable ball or babbitt flange bearings. These trough ends were designed for longer life, quicker, easier and more economical change-overs. On these units only the hub bearing wears out leaving the trough end unharmed. Therefore in your change-overs the price of the hub bearings is only about one half the price of the old solid piece trough ends. Our counter shaft trough ends are of this same design. Shipments on both units can be made from stock. We manufacture a complete line of screw conveyors and accessories and shipments can also be made from stock.

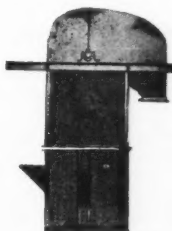
Heavy Duty

BATCH MIXERS

Built to last



Made of all steel, extra heavy duty welded construction. Capacities ranging from 1, 1½ and 2 ton and are made even larger to your individual specifications. Our engineers will be glad to assist you with your mixing problems. Batch mixers manufactured by Industrial are acclaimed by the mixed feed industry, chemical plants, oil and grease manufacturers, food mixers and many other industries throughout the nation as the best Batch mixer they've ever operated. Each and every mixer manufactured in our modern plant is given special care in its fabrication and assembly. This results in better mixtures and better performance.



BUCKET ELEVATORS

Built

to your

Specifications

All metal elevators complete with head, boot, legging and machinery made to your individual specifications. This is an all metal unit and insures longer wear and dust-tight performance. Head and boot is furnished with shaft mounted on ball or babbitt bearings. Boots come with large slide clean out doors. Furnished with cotton or rubberized belt and high speed cups.

INDUSTRIAL MACHINERY COMPANY Incorporated

2100 South Main Street

Fort Worth 1, Texas

ENGINEERS MANUFACTURERS

Elevating
Conveying

of
Equipment

Hoisting
Mixing

EDITOR'S DESK

The Farce of Ceiling Prices

Rumors coming out of the nation's capital indicate that revisions in the ceiling price order covering soybeans will be forthcoming shortly. We had been told there would be none until the soybean industry advisory committee met again, and to our knowledge there has been no such meeting.

Major change indicated would be the lowering of ceiling prices at country points by about 5 cents per bushel. We agree there should be a more equitable price spread between Chicago and country points, in order that the futures market may operate effectively. Perhaps 5 cents per bushel is the correct adjustment. On that we will not disagree.

We do disagree on the basis on which the change is rumored. Labor has continually pushed wage schedules through the ceilings. Automobiles have been favored with upward price adjustments. Other items the farmer buys have been allowed to move upward.

So what happens on soybean ceilings??? We are going to cut back the level which the farmer receives. Would it not be more just to raise the Chicago ceilings than to cut at the country level? Would it not have been easier to administer and explain? Especially when everything else moves upward?

Agriculture is the only phase of the American economy which has been placed under effective ceilings. We need one of two things. Either effective ceilings on the commodities the farmer buys, equally as effective as on the things he sells, or discontinue this entire ceiling price farce and get down to the realities of supply and demand. Now we have an ineffectual thing which is applied at some levels, not at others.

No Over-Supply of Protein Feeds

With a large cotton crop being harvested in Southern states, and with soybean harvest under way in some areas, many people have predicted protein meal prices far below present levels. It was common thinking that we would be over-supplied with protein, that it would be a drag on the market.

There will be about 10 percent more tonnage of protein meal available from the 1951 crop than from the previous year, when the figures on cottonseed, soybean, linseed and peanut meal are all added together.

But balanced against that there will be about 5 percent increase in animal unit numbers. Even more important, there is a decided tendency toward heavier feeding of proteins, especially in areas where supplies of corn are growing smaller and harder to obtain. Feeders are becoming more protein conscious, in view of the newer developments such as vitamin B-12 and the antibiotics. Increased numbers of animals are receiving adequate supplies of protein. Thus the average protein consumption per animal is increasing.

Perhaps spurred by a support program announced a short while ago, cottonseed meal prices have been consistently higher than soybean meal. One must come down—or the other must move upward. It is our guess that soybean meal will move upward to the point where it will be more nearly in historical relationship to cottonseed meal. We could be wrong.

Time for DiSalle to Act

Ceiling prices on soybeans seem a bit far-fetched at the moment. Even farther from reality are soybean oil ceilings. Soybean oil meal, in the September squeeze, bounced up there.

But our nation still has a ceiling price program, and in the bill that established and continued that program there is provision for commodity advisory committees.

There has been no move yet to place on the soybean advisory committee to OPS the representation which growers have every right to demand. Processors and handlers are represented, but not growers. If ceiling prices on soybeans are to be considered, and if the administration of those ceiling prices on soybeans is to be considered, there should be adequate representation from growers. Until there is such representation the director of OPS has not carried out the provisions of the act.

Growers of soybeans have every right to demand such representation. We have every right to expect it. Let's get it.

Exports May Hold Markets Steady

During recent months we have written much about our export markets and what we were going to have to do to maintain them. On the Des Moines convention program there was an entire half day devoted to the subject. At this writing it is hard to tell what the chances for exports of 1951-crop soybeans may be—we can only guess.

We do know that the Japanese—sitting next door to Manchurian supplies, but in the dollar sphere—are asking for 30,000 tons in the current quarter of the year, and for 80,000 tons during the first quarter of 1952. Total supplies needed for the Pacific area would seem to be around 15 million bushels. European countries have voiced their intentions of getting into the market. Assuming the availability of dollar exchange to them in one way or another, it is almost certain that as the harvest season progresses and soybean prices dip toward support prices the export buyers will come into the markets in no small way.

Profiting by the experiences of the past several years, we anticipate buyers of export soybeans will take advantage of harvest season prices more than ever before. In so doing they will help stabilize prices during that period, and will perhaps narrow the spread between harvest and after-harvest price schedules. However, at least some of the Washington dopesters are predicting a sizable increase in soybean prices after the harvest is completed. Based on previous experience, it may take a good margin to bring the soybeans out of storage, once they are placed there.

Guessed Wrong on Squeeze

Several times in recent weeks we have been reminded of an editorial we carried in the June issue, titled "You Can Look for a Squeeze". In that dissertation your editor predicted a short supply of beans just before the new crop became available.

We were wrong. Enough expeller plants shut down operations that the shortage of beans did not develop. The squeeze came on soybean oil meal—September shipment. It bounced up to the ceiling, stayed right there until the new crop movement was well under way.

We are sorry we guessed wrong—and we hope you did not take us too seriously.

CUT YOUR PACKAGING COSTS...

USE BEMIS BURLAP BAGS!

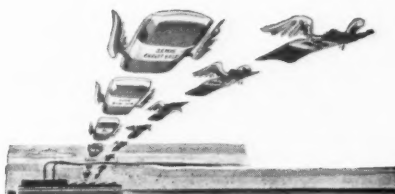


A big manufacturer using 50,000 bags a day, kept a record of repeat trips of burlap bags . . . and learned that the bag cost only 6 cents per trip.



**IT COSTS YOU ONLY PENNIES PER
TRIP TO USE BEMIS BURLAP BAGS**

You can use Bemis Burlap Bags over and over again . . . and cut your packaging costs to the bone.



When you specify Bemis, you get the best burlap bags . . . selected standard constructions, strong seams, full cut, quality brand printing. Bemis Burlap Bags give you the packaging economy you're looking for.

**ASK THE BEMIS MAN FOR THE
UP-TO-DATE PICTURE ON BURLAP**

BEMIS



Bemis—an American enterprise in business since 1858 . . . employing 10,000 men and women in 45 plants, mills and sales offices . . . in 28 states, coast to coast.

GROWERS

Stop Giant Foxtail

One important way to help stop giant foxtail, a new and serious weed in the Midwest, from spreading to your farm is to harvest your soybeans with a clean combine.

Weed control specialist Fred Slife in the Illinois College of Agriculture says combines have carried giant foxtail to many clean fields. To prevent infestation of new areas, they should be cleaned thoroughly after each field is harvested.

Seed-cleaning attachments on combines will remove much of the seed and prevent it from falling on the ground and spreading.

Giant foxtail, commonly called wild millet, has become the most serious hazard to cultivated crops on some farms in east-central Illinois only in the last five years. It flourishes in corn and soybeans, and its seed will mature between the last cultivation and frost. Some badly infested fields even have to be left unharvested.

1950 Crops By Counties

Champaign County, Ill., in 1950 was still a standout as the nation's leading soybean county, and became the country's first to produce 4 million bushels, according to the U. S. Department of Agriculture.

However, New Madrid County, Mo., moved into second place, nudging out Vermilion County, Ill. And there were some other upsets in the lineup of the nation's leading soybean-producing counties in 1950.

The information is contained in "Soybeans Harvested for Beans, Acreage, Yield and Production 1949



—Photo courtesy Progressive Farmer
A growing popular—and profitable—use of soybeans in parts of the South is for hogging off with corn. There has been a rapid rise in the number of farmers in this type of enterprise. It saves the labor of harvesting and storage and fits well into mechanized farming.

and 1950, by Counties for 18 Principal States."

Sixty counties in the U. S. produced a million bushels or more of soybeans in 1950, compared with 50 counties producing a million bushels in 1949. Of this number, 11 produced between 2 and 3 million bushels, and six over 3 million bushels.

Thirty-five of the million-bushel counties were in Illinois, seven were in Missouri, five in Iowa, three each in Minnesota, Indiana and Ohio, and two were in Arkansas.

The nation's 10 leading counties and their bushel production in 1950: Champaign County, Ill. 4,259,600; New Madrid County, Mo. 3,538,700; Vermilion County, Ill. 3,512,400; Christian County, Ill. 3,420,100;

Sangamon County, Ill. 3,233,200; Iroquois County, Ill. 3,112,300; Mississippi County, Ark. 2,886,000; Macon County, Ill. 2,656,400; Stoddard County, Mo. 2,422,100; and Pemiscot County, Mo. 2,359,100.

COVER PICTURE

Some processing plants stay open around the clock during the peak of the soybean harvest.

This night picture was taken last October at the plant of Hemphill Soy Products Co., Kennett, Mo., during a record run—the largest in the firm's history.

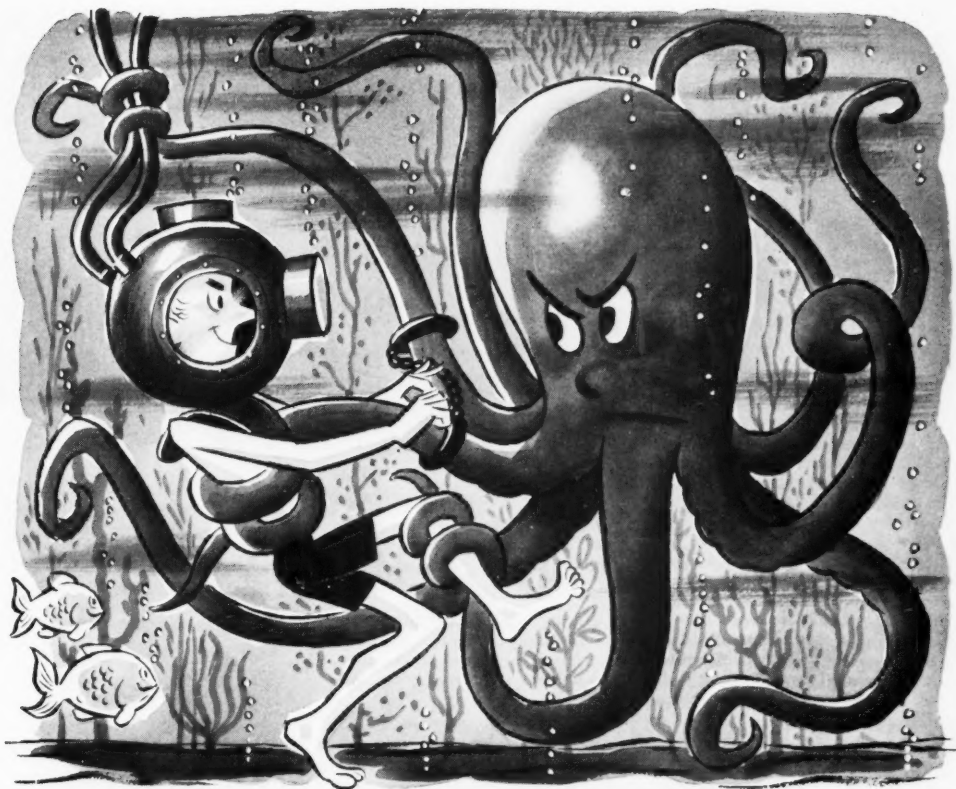
State 2-0350
Teletype CG283

New York
Memphis
Dallas
San Francisco

Zimmerman Alderson Carr Company

Chicago

BROKERS TO THE SOYBEAN PROCESSOR



"That's like processing without

**PENOLA
HEXANE!"**

SPECIFY PENOLA HEXANE — for more efficient, more economical processing. You get all 8 of these important advantages when you use Penola Hexane — Purity • Stability • Balanced solvency • Lower vapor pressure • Narrow boiling range • Special handling • Immediate availability • Technical assistance by experts.

For Information and Assistance—Call our office nearest you for any technical data you may need regarding your processing operations.

Penola Oil Company

NEW YORK
CHICAGO

DETROIT
ST. LOUIS

Penola



We Agree prepressing is old stuff

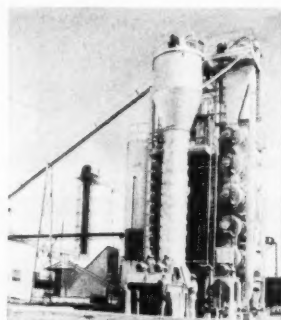
In Europe almost a half century ago prepressing was an accepted idea. Yes, and the same idea, namely, prepressing oleaginous materials in a screw press and then running it through a solvent extraction plant is still an old method, *but*

PREPRESSING IS NOT EXSOLEX

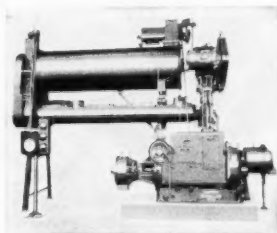
It's true you can prepress in any mechanical screw press and run the material through a solvent extraction unit and get fair results, but nothing like the results you get with a genuine EXSOLEX installation. Exsolex is a process whereby the material is pressed in a Pre-Expeller, not just any screw press, is flaked and especially prepared by a patented process for extraction in an Anderson Solvent Extraction unit, not just any solvent unit. It is the preparation of the material between the two extraction processes plus highly efficient equipment that makes a tremendous difference in the remarkably low residual oil, nearly always lower than .5%. The Exsolex process is patented . . . Only Anderson can supply the highly efficient extraction equipment . . . therefore, only with the Anderson Exsolex process can you obtain phenomenally low residual oil results on all oleaginous materials. Write today and an Anderson engineer will call without obligation and give you details.

THE V. D. ANDERSON COMPANY
1976 WEST 96th STREET • CLEVELAND 2, OHIO

*Exclusive trade mark reg. in U.S. patent office and in foreign countries. Patent rights on Exsolex Process are owned by the V. D. Anderson Co.



Solvent Extraction Unit



Pre-Expellers



ANDERSON

EXPELLERS* • SOLVENT EXTRACTION • EXSOLEX*

World's Largest Suppliers of Extraction Equipment

Makes Low-Cost Food from Soy Flour, Yeast and Dried Milk

By MARIE L. LAVALLARD

Assistant Editor, Arkansas Agricultural Experiment Station

A small man driven by a mighty mission—that aptly describes Dr. Barnett Sure, biochemist, who has been head of the agricultural chemistry work of the Arkansas Agricultural Experiment Station for 30 years.

Dr. Sure has been interested in all phases of nutrition for as long as he can remember. He is recognized internationally for the research he has carried on at the University of Arkansas. He is an independent discoverer of vitamin E, which is essential for reproduction, and has done considerable work on the role of vitamins in fertility and lactation. His interest in healthy babies, healthy mothers, and healthy people has driven him on for more than a quarter of a century.

For the past several years, that interest has concentrated on the role of protein in health and disease. According to him, with the over-emphasis we have had on vitamins and minerals during the last 30 years, nutritionists and the public in general have failed to appreciate the significance of proteins. He is out to correct that situation, and also, since protein-rich foods are too expensive for many people in our country and unavailable to people in many other countries, to devise ways of supplementing cereal diets economically with high-protein foods.

His animal nutrition experiments, using albino rats, have convinced him that replacing very small amounts of the cereals in all-cereal diets with high-protein food results in tremendous increases in growth, economy of food utilization, and gain in weight per gram of protein intake. One of the protein-rich foods he has used is soy flour; others are

food yeasts, non-fat milk solids, and peanut meal. The basic cereal diets have included enriched wheat flour, milled white corn meal, and polished rice.

In his early tests with soy flour, he substituted 1, 3, and 5 percent enriched wheat flour with equivalent amounts of soy flour in the presence of dried skim milk in proportions which would be used in baking bread. These small amounts of soy flour resulted in remarkable increases in body weight and gain per gram of protein intake (or protein efficiency ratio). For example, 1, 3, and 5 percent soy flour increased the total protein in the ration by only 4.2, 12.5, and 20.8 percent, but resulted in increased gains in body weight of 55, 108, and 192 percent, and increased protein efficiency ratios by 24, 45, and 60 percent, respectively.

Improved Proteins

Additions of soy flour improved the proteins in milled white corn meal to an even greater extent. Increases in growth were 86, 172, and 271 percent, and in protein utilization, 47, 71, and 95 percent, respectively. The soy flour also improved the quality of the proteins in milled white rice, though not to as great an extent. As a side line in his work, he discovered that the proteins in polished rice are about three times as effective as those in enriched wheat flour as body builders, and that both are more effective than corn meal.

In a comparison of the relative merits of various high-protein foods as supplements to the proteins in wheat flour and corn meal when fed on the same nitrogen basis, he found no marked differences between the food yeasts, soy flour, dried non-fat milk solids, or dried buttermilk. The peanut meal proved the poorest supplement.

Next the questions of reproduction and lactation came up. Would small supplements of protein foods prove as effective here as they did in growth? The test rations consisted of enriched flour and 5 percent dried skim milk powder, the same two plus 5 percent soy flour, and the two plus 10 percent soy flour. Once again, results were conclusive. Lactation of mothers on the ration of flour and skim milk was abnormal; the young were stunted, and the nursing period was much prolonged, lasting 42 days as compared with 23 days in the case of the ration containing 5 percent soy flour. The nursing young in the other two groups, which received soy flour, were active, youthful, and vig-

orous, with sleek appearance. More of the young were reared and the nursing period was shortened.

Thus Dr. Sure accomplished his first objective—he demonstrated the value and need of protein in the diet. But the other objective still remained. How could people existing on diets composed largely of cereals put his findings to use?

First he tried a series of human acceptability studies, in which he incorporated small amounts of cultured and food yeasts into baked products, meat dishes, soups, drinks, and puddings. These were tried out in test meals in dining halls at the University, at the veterans' hospital, and in the University nursery school. Foods in which up to 3 percent yeast was used were well accepted.

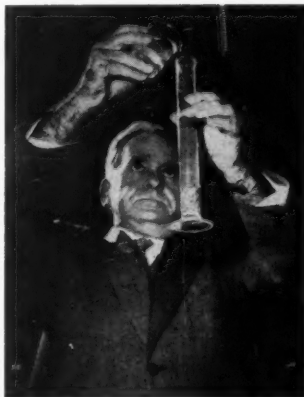
Next, a well known breakfast cereal enriched with small amounts of food yeast, soy flour, or non-fat milk solids was fed to students and faculty members. The cereal was cooked with water, the usual way of preparing such cereal. No differences in palatability could be detected between the protein-enriched and non-enriched breakfast food. In other words, for a very slight added cost, manufacturers of breakfast cereals could turn out a product which would have greatly increased food value and would be acceptable to consumers.

Grocery Trade

But Dr. Sure still was not satisfied. The enriched breakfast foods were not yet on the market, and even if assuming housewives had access to soy flour, or dried skim milk, or the other protein-rich foods, it would take a tremendous educational cam-

(Continued on page 23)

BARNETT SURE





Chicken fed on a ration with soybean oil meal as practically the sole supplement, weighs a pound at four weeks. Ration was developed at Purdue University under the direction of Dr. C. W. Carrick, professor of poultry husbandry (in picture). If all the broilers produced in the country were fed the needed amount of protein it would require one-fourth of all the soybean oil meal produced.

Soybean Oil Meal in Manufactured Feeds

By C. K. SHUMAN

Director Research and Development, Feed Mill Division, The Glidden Co., Indianapolis, Ind. From address before the American Soybean Association convention in Des Moines.

YOUR GENIAL secretary, George Strayer, has requested that I briefly summarize the comments made at this panel discussion, bearing in mind the impact which these recent research developments may have upon the utilization of soybean oil meal in manufactured feeds.

Before commenting on what impact these developments may leave in relation to the further use of soybean oil meal in manufactured feeds a few statistics may be of interest.

Animal Population

Reports on animal population numbers on farms the beginning of

the year indicate milk cows hovering around the 25 million mark, and cattle numbers around the 90 million mark, up to 84 million in 1951.

Contrast this with commercial broiler production. Figures from the American Feed Manufacturers Association showed about 142-143 million in 1940, 345 million in 1945, and better than 600 million in 1950. It is estimated that it may reach the 700 million mark in 1951.

Turkey poult demand has been strong in 1951 and the high of some 44 million raised in 1945 followed by a decline was again equalled in 1950. Based upon large poult hatchings it may reach 46 million or more in 1951.

This year's spring pig crop and the indicated fall crop combined account for about 106 million head, which

would be the second largest on record. Feeder cattle discouraged by uncertain price controls show January-June shipments totalled about 5 percent larger than a year ago.

Manufactured Feeds

A look at recent figures released by Walter Berger of the American Feed Manufacturers Association indicates that tonnage of livestock and poultry feeds manufactured during the first half of 1951 reached an all-time level. This is due in part to high population numbers and an increasing awareness among feeders that balanced rations pay off.

Poultry feeds account for 60 percent of the industry's tonnage and the production of manufactured poultry feeds increased 10 percent in the first six months of 1951 as compared to 1950. Increases of 30 per-

cent were reported for manufactured turkey feed and 26 percent for broiler feed. Big gains of 34 percent were reported in the production of manufactured hog feeds although they account for less than 9 percent of feed mill production.

The latest feed survey committee report on estimated feed use again shows that we have a surplus of grains and mill feeds. This is in contrast to high protein feeds which barely meet the estimated usage, which usage is recognized as falling far below recommended standards.

More Protein Needed

This committee has calculated that the estimated usage for high protein feeds, oilseed meal basis, for swine during 1950-51 would approximate 3,101,732 tons. If we assume that our hog population was fed more nearly in accordance with recommended standards, our supplies of high protein feed would indeed fall into the deficit region. One hundred million pigs marketed at 240 pounds live weight would provide 240 million hundred weight of pork. Using 15 percent protein as the average protein content of the ration and considering grains and other nutrients as equivalent to 10 percent protein, then five extra pounds of protein would be required per 100 pounds of feed to meet the overall demands.

On the assumption that 375 pounds of total feed was required to produce 100 pounds of pork, each hog would require 18.75 pounds of protein per 100 pounds, or 45 pounds total protein to be supplied by approximately 100 pounds oilseed meal basis. Here then would be a requirement for 5 million tons of high protein feed just to market one annual pig crop.

If we consider further the use of 1400 pounds of a balanced ration carrying only 14 percent protein to meet gestation and lactation needs for brood sows, then the 7 million hogs required to produce this crop of pigs on a two litter system would require an additional 375,000 tons of high protein feed, oilseed meal basis, making a grand total for hog production of 5,875,000 tons. This is 1 1/4 million tons more soybean oil meal than was produced during the 49-50 period and represents a protein requirement for hogs alone which is 51 percent of the major total protein concentrates produced during the last year.

Let's look at broilers. If we assume 700 million broilers and use feed survey committee feed estimates, there is a feed requirement of 4,305,000 tons. Assuming 30 percent of

the total feed as high protein feed we find an estimated need of 1,291,500 tons of protein for commercial broilers alone. Further let us consider that 90 percent of this protein need as being supplied from soybean oil meal and we have a requirement for broiler production alone amounting to 1,160,000 tons, or approximately 25 percent of the 1949-50 production. Every time we increase broiler production by 100 million birds we find a new protein requirement approximating an additional 185,000 tons.

These two illustrations will serve to indicate that any marked increases in livestock numbers will necessitate further increases in protein supplies if even the same level of feeding with respect to balanced rations is to continue. This increase coupled with the increased usage of balanced rations will throw a heavy burden on existing protein supplies.

Summary

A summary of the developments presented by these panel members as applied to the use of soybean oil meal in manufactured feeds should stress these points.

The use of soybean oil meal in manufactured feeds is a comparatively recent development. Increased production would not have been possible without this major protein source which since the war period has made up more than 40 percent of our protein concentrate supply. It is readily obvious therefore that the feed manufacturer must rely heavily on the intelligent use of soybean oil meal if the increased need for balanced rations through manufactured feed is to be adequately met.

1—A shortage of high protein feedstuffs is the first limiting factor in the efficient and economical production of livestock and poultry. These researches point the way to the more intelligent use of already existing protein supplies and place added emphasis upon the importance of soybean oil meal in meeting the increasing protein demands.

2—From the protein standpoint soybean oil meal is a well balanced source of amino acids with the possible exception of a borderline deficiency of methionine. This assumes that proper consideration has been given to heat treatment of soybean oil meal.

3—Much of the credit for animal protein concentrates and their advantages over such a source of protein as soybean oil meal must now be credited to factors other than protein.

C. K.
SHUMAN



4—Soybean oil meal can be used in increasing quantities in manufactured feeds even in the critical feeds for early growth and reproduction, providing that it is recognized that when animal protein concentrates are replaced with soybean oil meal that it is necessary to replace in the ration those nutrients which were formerly associated with the animal protein concentrates.

5—A better understanding of the vitamin B-12 requirements for livestock and poultry throughout all phases of the life cycle makes possible an increased usage of soybean oil meal in many rations.

6—Production of fish meal and cake over the past 10 years has not increased and supplies of milk by-products available to the manufacturer have decreased over the same period. Supplies of such critical materials as animal and marine by-products should be conserved for use in those rations where their use is still found to be desirable for the best results in growth and reproduction. The application of the newer knowledge on the vitamin B-12 requirements of poultry and livestock throughout various stages of life cycle feeding will permit the intelligent use of vitamin B-12 supplements and permit more intelligent use of these critical protein supplies known to contain vitamin B-12 and other nutrient factors.

7—Research is keeping pace with demands and indications are that amino acid needs will be met in the future through the intelligent supplementation of amino acids supplied from synthetic sources, as well as natural sources. Methionine is particularly noteworthy at this time.

8—Not to be forgotten is the fact that continued high usage of soybean oil meal will place heavier demands on mineral needs, an extremely important factor in feed manufacturing when considering particularly phosphorous supplies.

9—A study of rumen synthesis will lead the way to a better understanding of the requirements and utilization of feed stuffs for ruminat-

ing animals and much can be expected from this kind of development in the future.

10—Soybean oil meal continues to be an important and economical protein ingredient for use in dairy rations. The most effective use of any combination of ingredients used in dairy rations is dependent, however, on first consideration being given to the quality of roughage available in the dairy feeding program. To effectively promote and gain further utilization of soybean oil meal in balanced dairy rations, the part played by the roughage program must not be overlooked.

11—The future of soybean oil meal continues to look bright. Scientific research points the way to its more intelligent use. Feeders more than ever before are realizing the advantage afforded through the use of balanced rations, and the demands for protein supplies required to produce balanced rations will be on the increase. Soybean oil meal properly used in many rations provides the most economical protein source for meeting these increased demands.

A word of caution may be in order. Soybean processors should not be satisfied and just rest on their oars because there is a ready supply for their product. It must likewise be recognized that research on other proteins is proceeding with progress. As soybean meal seeks a higher usage level in many manufactured feeds, its quality as a protein source will be more critically evaluated by all aggressive feed manufacturers. I am happy to report to this audience that already your National Soybean Processors Association in cooperation with the Nutrition Council of the American Feed Manufacturers Association is giving consideration to the continued improvement in quality and uniformity of soybean oil meal. This spirit of cooperation is the kind that speaks well for your industry.

I hope this audience will not gain the impression that soybean oil meal alone is the solution to all feeding problems and that soybean oil meal and a pill form of B-12 and antibiotic will be the practical answer to a farmer's feeder problem. These researches, while they point out ways for increasing the usage of soybean oil meal, likewise stress the need for proper balance of all nutrients. We should remind ourselves that the feeding of an imbalance of nutrients can be just as harmful as the original nutrient deficiency we were trying to eliminate.



Soy flour baking laboratory at the Northern Regional Research Laboratory.

Soy Flour for the Export Market

By E. A. BUELENS

Chairman Executive Board, Soya Food Research Council, Chicago, Ill.

NEW PRODUCTS of merit, such as soya flour, are seldom readily accepted by the consumer. In the case of food products the consuming public usually is rather skeptical. Food made from soybeans has been successfully used throughout the Orient for hundreds of years. The introduction of soya flour as a basic ingredient in the manufacture of foods in this country is comparatively recent. Soya flour was first introduced to the baking, meat and other food industries in the United States about 25 years ago. Little was known about the chemical and functional properties of soya flour at that time. It is not surprising that early experiments did not always prove entirely satisfactory.

The ever expanding interest in the chemistry of proteins has brought about extensive research in the production and utilization of soya flour. As a result, the methods of processing soybeans for flours have been radically changed and greatly improved in recent years. The nutritive value of soya flour as well as the knowledge of its proper uses are now well known and fully appreciated by leading technologists. Today soya flour ranks high as a basic

ingredient used in the manufacture of a wide variety of food products.

Strictly speaking the term soya flour is a misnomer. Soya flour conforms to this definition only in appearance. The composition and functional properties of soya flour are entirely different from those of any of the cereal flours. Soya flour is basically a highly concentrated vegetable protein material. The protein content of soya flour is not only high, but numerous tests have indicated that it is nutritionally adequate for the growth and maintenance of both infant and adult. Soya flour can be used as a supplement for use with other products which have a relatively low or deficient protein content.

In addition to being one of the richest and most economical sources of essential protein, soya flour contains large percentages of other valuable nutrients. It is an important source of the B-complex vitamins and also provides calcium, potassium and traces of other minerals.

The three principal types of soya flour and soya grits being produced today are the defatted, low fat and full fat products. During 1948 there was produced approximately 505 million pounds or 252,500 tons of soya flour and soya grits. It would take

about 568,000 acres to grow the soybeans required to produce this tonnage. During 1948 the direct purchases by our government through the U. S. Army and the Department of Agriculture accounted for roughly 430 million pounds of flour. The larger part of the flour purchased by them during this year was shipped to Germany to feed this protein hungry nation. The best estimates place the total production of soybean meal at about 5 million tons per year. If our domestic and export markets could be developed to a point where they would continue to take approximately 250,000 tons of flour per year, 5 to 7 percent of the soybean crop would find its way into edible soy flours and grits. This could be a stabilizing factor on the market and would be beneficial to the grower and processor. In 1950 the production of edible soy flours and grits was approximately 95 million pounds or 47,500 tons. Compared with 1948 this is a substantial reduction and is due to only 5 million pounds being sold for export and nothing being purchased by the government directly for shipment to foreign countries.

Soy Food Council

The Soy Food Research Council is in its 14th year. During this period it has been actively carrying on and has kept in close contact with various research projects which will help to develop and expand the domestic and foreign markets. At the Northern Regional Research Laboratory, Peoria, Ill., within the past few years they have installed a complete baking laboratory. The acceptance of soy flour by the baker for use in bread can be achieved only through producing a soy flour which will make it possible for the baker to obtain uniform results.

The investigation at the Northern Regional Research Laboratory will, in general, be an effort to determine:

- 1—The reasons for the rather low level acceptance of soy flour by the baking industry.

- 2—To determine the reason for and establish the fundamental cause of some of the deleterious effects caused by some soy flour.

- 3—Develop methods and procedures for the manufacture of a new and better soy flour.

- 4—Through research, determine the best methods for using various types of soy flours in bread and other baked products.

Officials of the Agricultural Research Administration have always

looked favorably upon soy flour and have felt that it will eventually have its place in food economy. This year to date two 1,000 ton lots of defatted soy flour have been purchased under the ECA program. This soy flour was shipped to Greece. Distribution of this soy flour in Greece is made to the mills under the jurisdiction of the Ministry of Commerce in accordance with rules and regulations as issued by the Food Ministry. Five percent of soy flour is mixed with wheat flour of 90 percent extraction. Using soy flour at this level a bread was produced which was uniform in taste, had good color, volume, crumb and crust. The early reports indicate that the results have been favorable.

Northern Laboratory

The Northern Regional Research Laboratory has done an outstanding job in its work on the use of soy flour in bread and if the program in Greece develops as is expected, much credit is due to this important branch of the Department of Agriculture. It is estimated that if soy flour is used in bread in Greece, they could consume 25,000 to 30,000 tons per year.

In addition to the work being carried on at the Northern Regional Research Laboratory similar research work is being done at the University of Minnesota under the able guidance of Dr. Geddes. Some of the work being done at the University of Minnesota duplicates what is being done at the Northern Regional Research Laboratory. We of the Soy Food Research Council are of the sincere belief that the protein fractionation work and baking tests being carried on at both of these laboratories will eventually lead to a soy flour far better than has ever been produced and that we will see the day when it will readily be accepted for use in bread.

About a year ago C. K. Shuman of The Glidden Co. and R. G. Brierley of the Archer-Daniels-Midland Co. spent about a month in Germany in an attempt to educate the key people in that country on the proper use of soy flour in their meats and bread. The German Food Ministry is still extremely interested in this work. Tests are still being carried on in Germany and those of us who are more optimistic believe that this work will be developed to a point where Germany will again consume a minimum of 100,000 to 200,000 tons of defatted soy flour per year.

As a result of some outstanding work done in the laboratory of one

of the member firms of the Soy Food Research Council, a fortified dry soy milk powder has been produced. Small parcels of this dry soy milk powder were shipped to Latin American countries. The early results were very favorable and were followed by extended tests in child feeding. These tests were supervised by medical men. Several other of the Latin American countries have indicated high interest in this project.

We are well aware that the quality of the various types of soy flours has been immeasurably improved in the past few years. Through planned research the member firms of the Soy Food Research Council continue to have their laboratories work to further improve the quality of these flours to find new uses for them. It is a frequently expressed opinion that some company, through its research efforts, will inevitably come forward with a soy flour greatly superior to anything yet produced and that a vast new market will be opened. We also believe that when world conditions settle back to normal and extreme competition develops in the battle for the consumers' dollars, soy protein, with its high nutritive value and low price advantage, will move on a huge scale into fields now only scratched.

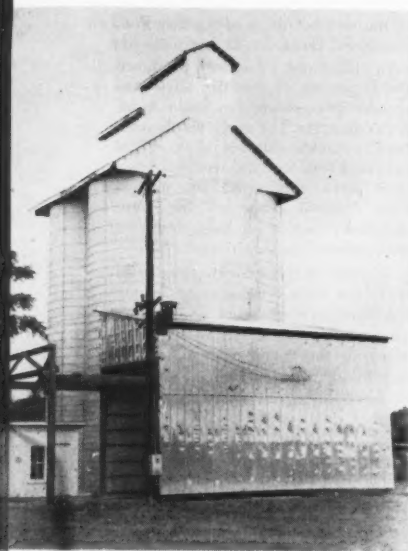
As in the past 14 years, the Soy Food Research Council will continue to closely follow research projects which we believe will expand and develop new uses for soy flour. We further feel that the future market for edible soy protein is very bright and that industry and the growers will benefit abundantly in the years ahead.

(From a speech by Mr. Buehlens before the convention of the American Soybean Association in Des Moines.)

LITTLE ASA'S BULLETIN

Storage space
may be short
this fall. See
Washington
Digest
page 34.





This 22,000-bushel elevator is on Scott Plantations, Tallulah, La., one of the South's large producers of soybeans.

What the South Is Going to Do with SOYBEANS

By C. DALE HOOVER

Head, Department of Agronomy, Mississippi State College

THE PRODUCTION OF SOYBEANS in the Southern states increased 68 percent last year as compared to 1949, whereas the increase for the nation as a whole was 24 percent. In spite of this 68 percent which resulted from an increase from 20,576,000 bushels to 34,557,000 bushels the South only produced 12 percent of the nation's crop in 1950.

As a basis for determining "what the South is going to do about soybean production" in the future, it is the purpose of this discussion to:

1.—Review briefly the production records in the South for the past 20 years.

2.—Consider the production record of 1950 and the factors now recognized as important in soybean production in the Southern Region, and

3.—Consider the future outlook as revealed by past and recent production data together with predictions lately obtained from Southern agronomists.

Past Record

The total production as shown in table 1 has increased from 2,701,000 bushels as the 1929-38 average to 34,557,000 bushels in 1950—an increase of 1179 percent. During this same period of time the production for the nation as a whole increased from 27,318,000 bushels to 287 million bushels, an increase of 963 percent. On the basis of these data it is evident that soybean production has been increasing more rapidly in the South than in the nation as a whole. It is also significant that the increase in 1949 over the 1939-48 average was approximately 100 percent whereas the increase in 1950 over 1949 was only 68 percent. *These data indicate that the production of soybeans was increasing markedly before the reduction in cotton acreage which affected the production in 1950.*

The past records also indicate that North Carolina was the leading soy-

bean producing state in the South from 1929 to 1942. In 1943 Arkansas took the lead and has held the top position except for 1947 when the production in Arkansas was slightly under that of North Carolina. North Carolina then ranked second from 1943 through 1949 and third in 1950 for the first time with Mississippi moving into the second rank position. Of all the Southern states the increased production in 1950 compared to 1949 was greatest in Mississippi and approximately 80 percent of the soybeans produced in Mississippi are produced in the Delta section. On the basis of the present and past production records Arkansas, Mississippi, North Carolina, Tennessee, Kentucky and Virginia are the principal soybean producing states in the South.

Soybean Production, 1949-50

Soybeans are well adapted to many of the soils in the South. The average yield per acre in the six most important soybean producing states last year was approximately 20 bushels per acre and Mississippi produced an average of 24 bushels per acre. The yield in the Mississippi Delta area was over 30 bushels per acre with a number of yields of 40 bushels per acre. The estimated yield in Washington County, Miss., a Delta County, was 35 bushels per acre and a few yields of over 55 bushels per acre were reported.

Several factors contributed to the increased production in 1950. The two most important factors were more acres and higher yields per acre. The increase in acreage was partially due to the diversion of cotton acres to soybeans in the Mississippi Delta which includes parts of Arkansas, Mississippi and Tennessee. The acreage in Mississippi and Arkansas was more than doubled and the yields were 50 percent higher in Mississippi in 1950 as compared with 1949. Another factor contributing to the record production in 1950

SOYBEAN PRODUCTION IN SOUTHERN STATES

State	Thousands of bushels				Yield, bu. per acre			
	1929-38 Average	1938-41 Average	1942-47 Average	1949	1950	1939-48 Average	1949	1950
Arkansas	223	905	3600	5820	11676	14.6	20.0	21.0
Mississippi	266	565	1480	1782	6768	12.8	16.5	24.0
North Carolina	1341	1914	2819	4224	5117	12.0	16.0	17.0
Tennessee	162	202	890	2500	3150	12.5	20.0	21.0
Virginia	250	509	1263	2106	2527	14.8	18.0	19.0
Kentucky	97	325	1163	2202	1890	15.2	18.5	17.5
Alabama	71	96	374	1037	1620	11.5	17.0	18.0
Louisiana	131	205	455	375	720	13.8	15.0	18.0
South Carolina	57	94	112	275	528	7.9	11.0	12.0
Oklahoma	32	22	55	143	357	7.4	11.0	17.0
Georgia	55	84	76	112	204	6.8	8.0	8.5
Texas	16	26	142	—	—	—	—	—
Total	2701	4947	12358	20576	34557			

SOYBEAN DIGEST

was a good season with adequate rainfall, especially in Mississippi and Arkansas. Increase in farm mechanization together with the use of better cultural practices were other important factors in the 1950 production. In 1950 soybeans were treated like a crop, says Dr. E. E. Hartwig of the USDA, leader of the soybean breeding and improvement program for the Southern Region, who is located at the Delta Branch Experiment Station at Stoneville, Miss.

The production of soybeans in the Mississippi Delta of Arkansas and Mississippi is closely related to the production of cotton since one of the overall considerations is how soybeans can be produced so that their production will interfere the least with the production of cotton. It is also important to note that soybeans produce as well on the heavy land of the Delta as on the light land. Since the heavy land is not suited to continuous cotton, soybeans are an excellent alternative cash crop and it lends itself well to mechanized production which is more advanced in the Delta than in other sections of the South.

In other sections of the South soybeans are an excellent crop following truck crops. This is a common practice in some parts of Virginia and North Carolina. Soybeans may also be grown profitably in the lower Coastal Plain and Gulf Coast Region following lupines or crimson clover.

In Kentucky soybean acreage is largely dependent on the corn acreage allotment since the bottom lands which grow corn are planted to soybeans to the extent that the corn acreage is restricted.

Some of the most important cultural practices are (1) proper seedbed preparation, (2) time of planting, (3) rate of planting, (4) spacing, (5) fertilization, (6) inoculation, and (7) insect control where necessary.

The seedbed should be prepared well in advance of planting and should be kept free of grass and weeds until the optimum date for

planting which has been found to be about May 15 in Mississippi. This date will come immediately after the planting of cotton and, therefore, works out nicely for a cotton farmer. Within six weeks after planting the soybeans should shade out the weeds and grass if the planting rate provides for 10-12 seeds per foot in the row. This weed factor is very important in the South. The row width should be the same as for corn or cotton, 38 inch, 40 inch, or 42 inch. On the basis of the present data there is no advantage to spacing closer than for corn and cotton. It is, therefore, possible to use the same cultivation equipment for soybeans as for the other row crops.

No fertilizer is recommended for the production of soybeans in the Mississippi Delta. In the Coastal Plain and Piedmont sections of the South potash and lime have given the greatest increase in yields with some need for phosphate. The low response to phosphate frequently noted is believed to be due to the high level of residual phosphate in many Coastal Plain soils due to past treatments with phosphate. No nitrogen is needed if the soybeans are well inoculated. Small rates of nitrogen are sometimes used to insure adequate supplies of nitrogen. Therefore, the fertilizer recommendations are in line with recommendations for other leguminous crops which are grown in the South.

Insects do not present an unusually difficult program in the production of soybeans in the South. The bean leaf beetle which sometimes appears in August can be controlled quite satisfactorily with DDT or toxaphene at a cost of \$1.50 to \$2 per acre.

Since soybean production must be considered in the Mississippi Delta in relation to cotton production, the demand in Arkansas, Mississippi, and Tennessee is great for a high yield early maturing variety. The best early maturing variety now available is S-100 which matures at Stoneville, Miss., Sept. 10-15. It

produces a fair seed yield but has a low oil content. The seed quality is often poor and its slender type of growth is not conducive to shading out grass and weeds. It is also susceptible to bacterial leaf diseases. Several new strains will be ready for release soon from the regional soybean breeding program at Stoneville and these new strains will mature as early as S-100, but they will have a higher oil content, a better quality of seed and heavier foliage.

Ogden and Roanoke are highest yielding varieties adapted to the Mississippi Delta, but they mature later than S-100. Ogden matures in early October and Roanoke in late October under climatic conditions at Stoneville, Miss.

Future Outlook

Several factors must be considered in attempting to predict the future developments in soybean production in the South. Some of the considerations pointing to the possibilities of further increases are:

1—General upward trend during the past decade ending 1949.

2—Higher yields per acre due to better varieties and improved cultural practices including liming, fertilization and effective economical insect control.

3—Favorable price structure with reference to other cash crops.

4—Increased mechanization on the farms in the South, and

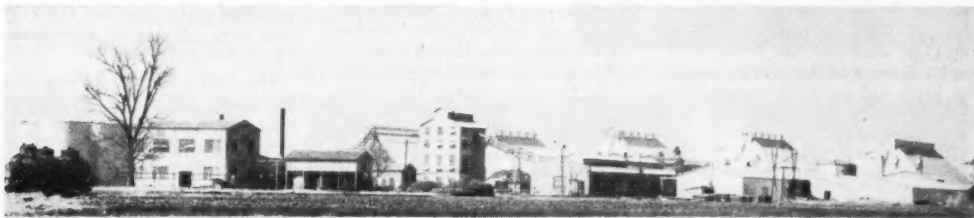
5—Adaptation to heavy soils of the Mississippi Delta which are not well suited to continuous cotton.

The most important single factor that will probably contribute to some reduction in soybean acreage in the South in 1951 is the relaxation of acreage controls on cotton and the record price of cotton. Another factor which could become important is the possibility of a more unfavorable season in 1951. The past year was particularly favorable to the production of maximum yields.

A letter was recently directed to the heads of the agronomy departments of all Southern land grant colleges soliciting the reaction of each

(Continued on page 23)

Market for soybeans exists in the South. Delta Products Co., Wilson, Ark., manufactures both margarine and shortening.



Factors Affecting Flavor Stability of Soybean Oil

The soybean oil committee of the Soybean Research Council has collected a list of factors encountered in processing of soybeans and refining of soybean oil which affect the flavor stability of the oil.

The purpose of collecting this information and distributing it to all processors and refiners is to provide assistance to those not completely familiar with the special care required in handling soybean oil. Following these suggestions should minimize the likelihood of occasional lots of inferior oil appearing on the market.

The members of the Soybean Research Council, representing the various individual companies which comprise the soybean processing industry, have contributed this information in the belief that such sharing of technical know-how by all operators, large and small, will insure that the soybean oil produced by the industry is always of highest quality.

Soybean Processing

FACTORS AFFECTING BOTH SCREW PRESS AND SOL- VENT PROCESSES

Favorable

- 1.—Processing of good quality, prime, yellow soybeans.
- 2.—The use of lowest possible temperatures throughout the processes.
- 3.—Degumming of the oil if oil is to be stored as crude.

Unfavorable

- 1.—Allowing beans to heat or mold during storage.
- 2.—Processing of brown, black, green, field-damaged, high moisture (above 10-12 percent H₂O), deteriorated or immature beans or beans containing foreign materials such as dockage, weed seed, etc.
- 3.—Contact of the oil with copper or brass and excessive contact with iron, particularly rusty iron.
- 4.—Aeration of the oil.
- 5.—Contact of the oil with precipitated sludge that has started to ferment. If oil is high in moisture, degum immediately.

6.—High temperatures throughout the processing.

7.—Dirty equipment, tanks, and tank cars.

8.—Degumming at temperatures above 150° F.

SCREW PRESS

Favorable

- 1.—Have moisture content of the cracked beans going to the screw press about 2 percent.
- 2.—Filter the oil to remove meal immediately after it comes from the screw press.
- 3.—Cool oil immediately after it leaves the screw press.

Unfavorable

- 1.—High moisture in the beans.
- 2.—Contamination of the oil with gear grease.

SOLVENT PROCESS

Favorable

- 1.—Solvent extract promptly after flaking.
- 2.—Use a narrow boiling-range solvent.
- 3.—Remove solvent at the lowest possible temperature.
- 4.—Keep heating surfaces clean where they are in contact with oil or miscella.
- 5.—Keep stripping column clean.
- 6.—Cool oil immediately after stripping.

Unfavorable

- 1.—Temperatures above 210°F. in the stripping columns and evaporators.
- 2.—Dry spots in pre-evaporation equipment.

(Continued on page 18)

Tri Plant at Greenville, Miss.



This 100-ton plant operated by Magnolia Soy Products at Greenville, Miss., is the largest trichloroethylene solvent plant in the United States.

The mill was designed and built by L. L. Ford Associates. The extraction is carried on in a Bollman type extractor. The solvent is removed from the meal and the meal is toasted in a one-unit desolventizer and toaster built specially for this mill by Ford.

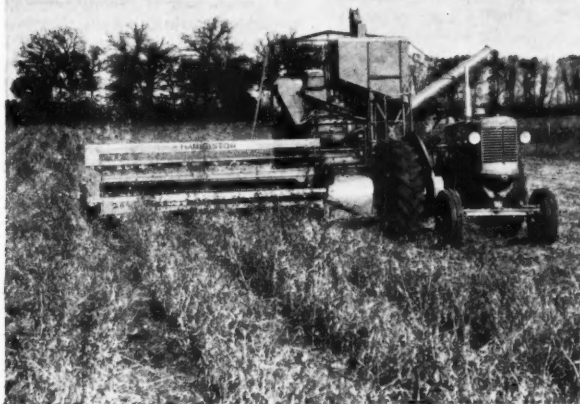
The 300,000-bushel storage was completed in time for last fall's soybean crop. Test runs were started for the mill about Mar. 1.

The mill, which is producing "Magnolia Brand" 44 percent soybean oil meal, is under the active management of Lyman Reed. Frank McDonald, the plant superintendent, was formerly with Delta Products Co. at Wilson, Ark.

get more beans faster, easier, cleaner with



HARVESTORS



MM Harvestors are durably built to last for years . . . upkeep costs are always low . . . breakdowns in the field, almost unheard of.

LOWEST COST PER BUSHEL, PER ACRE

Progressive farmers recognize MM HARVESTORS as the best soybean combines in the field . . . and they buy more of these economical, dependable combines than any other make. Here's why:

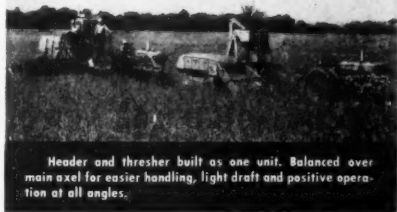
MM HARVESTORS get all the crop even under weediest conditions. There's no bunching or slugging of cut beans in the rasp bar cylinder. Easy rubbing action of the rasp bars thresh out the bean *gently*. Cracked beans and chewed or torn stalks are eliminated. Cleaning shoe eliminates fine chaff and leaves clean, uncracked beans in the bin.

Exclusive MM GRAIN PAN design prevents bunching of beans at sides or ends even on rolling land. MM CLEANING SHOE is automatically levelled for best cleaning position regardless of working tilt of the HARVESTOR. UNIT-MATIC POWER can be used for hydraulically lifting, lowering and varying height of cut.

Get beans faster, easier and really clean for the lowest cost harvesting per bushel, per acre, per dollar invested. Get an MM HARVESTOR. See your MM Sales and Service Dealer or write direct.



One man can handle both Harvester and tractor with ease. Adjustments safely made on the go to fit all field conditions.



Header and thresher built as one unit. Balanced over main axle for easier handling, light draft and positive operation at all angles.



Quality Control in MM FACTORIES ASSURES DEPENDABLE PERFORMANCE IN THE FIELD

MINNEAPOLIS-MOLINE

MINNEAPOLIS 1, MINNESOTA

3.—Air leakage into vacuum stripping columns.

4.—Heating in the presence of excessive moisture in the distillation system.

5.—Presence of meal during distillation.

(Note: Under comparable conditions the solvent process generally makes better oil than the screw press and the screw press makes better oil than the hydraulic method.)

Oil Refining

Favorable

1.—Use of water free from iron and low in calcium for washing and making caustic solutions.

2.—Refining as soon as possible after degumming.

3.—The centrifugal refining method may be better than the kettle process.

4.—Use of a slight excess of caustic in refining.

5.—Complete removal of soap during washing of refined oil.

6.—Bleaching under vacuum without air leaks.

7.—Use of more bleaching agents than necessary to reduce color to desired level.

8.—Hydrogenate under conditions to lower linolenic acid as much as possible.

9.—Complete removal of nickel hydrogenation catalyst by post-bleaching and/or caustic washing.

10.—Avoidance of metal contamination. Liquid soybean oil needs only 0.1 ppm of iron and .01 ppm of copper to affect stability.

11.—Complete deodorization, that is, complete removal of odor and flavor. This is influenced by time, temperature, pressure, volume of steam and design of equipment.

12.—Deodorization at lowest practicable temperatures consistent with complete removal of odor and flavor.

13.—Prevention of condensation at the top of deodorizers.

14.—The use of a metal inactivator during deodorization.

15.—Cooling of deodorized oil promptly out of contact with air after deodorization.

16.—Cleanliness of all equipment.

17.—Proper laboratory control of all operations.

Unfavorable

1.—Long storage of the crude oil. Degummed oil also deteriorates, but not so rapidly as crude.

2.—More than one hydration (degumming).

3.—Inadequate contact between oil and alkali in the refining process.

4.—Excessive amounts and/or high concentrations of alkali in refining.

5.—Failure to produce break-free oil by refining.

6.—High refining temperature.

7.—Incomplete refining or removal of foots.

8.—More than one water wash to remove soap.

9.—Exposure to air at high temperature during or after hydrogenation.

10.—Presence of phosphatides, alkali, or soap during hydrogenation.

11.—Failure to exclude oxygen during deodorization. This can occur from air leaks in the equipment or oxygen in the steam.

12.—Local overheating of oil in heat exchangers.

13.—Excessive exposure of oil to light after deodorization.

14.—Exposure of oil to air at high temperature after deodorization.

15.—Presence of clay or carbon during deodorization.

16.—Storage of deodorized oil under conditions where it can absorb undesirable or foreign odors.

17.—Delays between the steps of the refinery operations.

18.—Dirty equipment and tanks.

— b d —

CORRECTION



Above is the likeness of N. L. Jacobson, associate professor of dairy husbandry, Iowa State College. But it was not the portrait that accompanied Professor Jacobson's article on dairy cattle feeding in the September issue of *Soybean Digest*.

By mistake our printer used the photo of Arthur P. Berry of General Mills, Inc., instead.

We regret the error and apologize to both Mr. Jacobson and Mr. Berry.

COMMERCIAL CORTISONE PRODUCTION STARTED

Commercial production of Cortisone has been started by the Glidden Co. at its soya products division's fine chemicals laboratory in Chicago, Ralph G. Golseth, vice president in charge of the division and P. E. Sprague, a vice president of the Glidden Company, have announced jointly.

Production of this scarce "wonder" drug used in the treatment of rheumatoid arthritis comes after four years of intensive research by Glidden chemists. Mr. Golseth pointed out. He said that all of Glidden's output of Cortisone already has been sold to pharmaceutical manufacturers, by whom it will be prepared for use by hospitals and physicians either in form for hypodermic or oral treatment.

The Glidden Co. itself will not be a supplier of Cortisone in form suitable for use by patients.

Glidden's production, according to Mr. Sprague, probably will not affect the price of Cortisone. The company's main objective at this time, he said, is to utilize available raw material to increase the total supply of the drug as quickly as possible.

Sprague remarked that Glidden's steroid research staff, headed by Dr. Percy L. Julian, claims to have made improvements "resulting in the best process to date for certain steps in the complicated synthesis of Cortisone."

Sprague also pointed out that Glidden's sustained research toward commercial scale production of Cortisone had led to developments probably even more significant.

He referred, he said, to "the development of techniques for the production from soya sterols of other hormones and steroids found along with Cortisone in the human adrenal cortex."

"Glidden regards the phenomenal Cortisone as but a start in the quest to reveal the functions of adrenal cortical compounds in human life. Some of these other compounds are in production at Glidden laboratories in lots adequate for fairly large scale clinical work being conducted through the pharmaceutical industry."

Sprague revealed that "very promising work" leading to the production of Cortisone from soya sterols is under way at the Glidden steroid laboratories. Although this has not reached commercial production, the work is being continued and intensi-

fied because of the world-wide shortage of Cortisone.

"Glidden was the first company in the world to produce large commercial quantities of sex hormones from raw materials of soybean origin", Sprague said. "We fully expect we shall eventually produce large quantities of Cortisone and related cortical hormones from the same raw materials."

— s b d —

MORE SUSPENSIDS

General Mills, Inc., has expanded production of Polyamide Resin Suspensoids. Introduced in Feb., 1950, the products will for the first time be consistently available in large quantities, according to Fred B. Speyer, product development specialist for General Mills.

"We now," Speyer said, "can offer the new Suspensoids in carload lots."

The Polyamide Resin Suspensoids are opaque white, water suspensions of General Mills' heat-sealing Polyamide Resins. During the past year and a half, they have found their largest volume use as heat-sealing adhesives and coatings. Individual formulations seal firmly to a wide variety of surfaces, including paper, cloth, cellophanes, metal foils, glass, leather, cork, wood and some plastics and plastic films. Like the Polyamide Resins from which they are made, they are resistant to greases, oils, water and water-vapor.

Recently, the Suspensoids have also worked their way into so-called "wet stick" adhesives. And they show promise as soil-resistant coatings for textiles, as protective and decorative coatings, as beater additives and tub sizes for paper and as binders for sawdust, cork, leather, textile fibers, pigments and other materials.

The Polyamide Resins themselves, base products for the new Suspensoids, are formed by the condensation of dimerized vegetable oil acids with ethylene diamine. In solution or as "hot melts," they are widely used as heat-sealing adhesives and water-vapor resistant coatings. Although non-blocking, they heat seal at low temperatures.

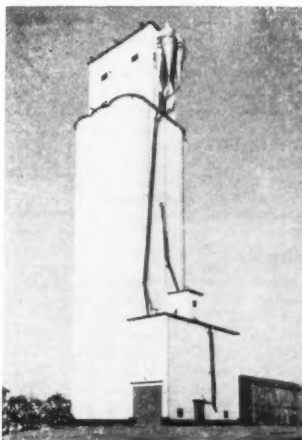
When applied as General Mills water Suspensoids, they form opaque, white films composed of discrete particles, indistinguishable to the naked eye. When heat-fused, these films become continuous.

General Mills now makes Polyamide Resin Suspensoids of four types, each tailored for a series of applications. It expects to make still

other types available as it continues its development program.

— s b d —

MISSOURI ELEVATOR



Above is the new 118,000-bushel steel and concrete elevator recently completed at Liberal, Mo., by the Lipscomb Grain & Seed Co., Inc., of Springfield, Mo.

A 12,000-bushel elevator erected in 1912 formerly served the firm at Liberal, which is 100 miles south of Kansas City, but officials of the company say that larger facilities were needed because of the increased acreage of soybeans in the area.

Last year Lipscomb handled over 90 cars of soybeans through the Liberal elevator but had to keep open 24 hours a day because it couldn't handle the trucks as fast as the beans arrived.

The new structure is the first country grain elevator erected in Missouri south of Kansas City since about 1920, officials of the firm report. It has two truck dumps and the standard equipment of cleaning and weighing machinery.

The old elevator will be used for such grains as milo and corn.

Officials of the company include: Leland Lipscomb, president, Irwin; Edwin Lipscomb, first vice president, Liberal; Forest W. Lipscomb, executive vice president and treasurer; Caleb Lee Lipscomb, vice president; and Forest W. Lipscomb, Jr., secretary, Springfield.

Also associated with the business are Jack E. Lipscomb and Peyton A. Enloe, Jr., Springfield; and Robert Johnson, Liberal.

SOY OIL PAINT

Improved exterior paints, on which a patent was issued by the government, contain soybean oil as the principal oil ingredient but do not remain tacky as do earlier soybean paints. These new paints have also improved drying qualities, color retention and durability.

The inventors are Arthur J. Lewis, Helen A. Moser and John C. Cowan, all of Peoria, Ill. They received patent 2,550,703.

The use of calcium oxide is responsible for the improvements in the paints.

GM APPOINTMENT

Sewall D. Andrews, Jr., vice president of the chemical division for General Mills, has announced the appointment of Arthur P. Berry as director of fatty acid sales for the division.

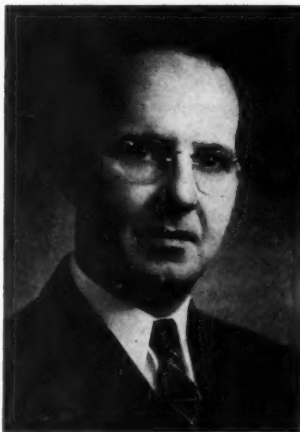
Berry will move from Kankakee, Ill., where he has been manager of the chemical plant, to the division executive offices in Minneapolis.

Berry worked for 11 years in the chemical division of Armour and Company assisting in the development of processes and equipment and supervising the operations of the fatty acid, fatty acid derivatives and glycerine plants.

Prior to coming with General Mills in 1944 he served for 18 months supervising production operations in the butadiene-from-alcohol plant operated by the Koppers Company in the production of synthetic rubber.

With General Mills he has served in the research and engineering departments working on the designing and construction of the fatty acid plant at Kankakee and has served as manager since the plant was placed in operation.

ARTHUR P. BERRY



A Slow Start to the Soybean Harvest

Harvest was getting under way in most of the soybean belt in late September with central and southern Illinois the only area where a substantial part has been combined. Quality of the first beans harvested was good.

Another big crop is coming out of the fields, but it will not repeat last year's record. Lower yields are reported in Arkansas, Iowa, Illinois, Kentucky, Indiana, Ohio, Louisiana, Missouri and New Jersey.

One locality in Illinois reports higher yields. Minnesota and Ontario will exceed last year's yields.

Little frost damage had been reported in late September, but not all the crop was out of danger, especially west of the Mississippi River. Drought damage was quite general east of the Mississippi and in southeast Missouri. Wet, cool conditions continued in the northern part of the soy belt west of the Mississippi.

A heavy infestation of bacterial blight was reported in Iowa.

The trend to more country storage continues and apparently a large part of the crop will be stored, especially if the price proves unsatisfactory. Storage space will be more nearly adequate than for the past several years.

The crop as of Sept. 1 was forecast at 273 million bushels by the U. S. Department of Agriculture crop reporting board as compared with 270 million bushels Aug. 1.

The indicated yield per acre of 20.9 bushels has been exceeded only by the record of 22.7 in 1949, the 21.6 bushels per acre harvested last year and the 21.4 bushels in 1948.

Reports of Soybean Digest correspondents follow:

Alabama

H. I. West, Bay Minette, for southwest (Sept. 25): Some beans earlier than usual due to dry weather in August. Less than 2 percent harvested. Estimated per acre yield 25 bushels. Total yield should go higher than 1950. Soybeans grading fair to good. Marketing situation good. Storage situation looks much better. About 15 percent will be held on farm.

Arkansas

L. M. Humphrey, R. L. Dortch Seed Farms, Scott, for Little Rock area (Sept. 24): Maturity of early varieties normal. Later varieties delayed a little by cool rainy weather. Less than 5 percent harvested. S-100s have just reached maturity. Per acre average about 18 bushels. Total yield little below earlier estimates due to

weeds and excessive heat in August. Yield at least 20 percent less than 1950. Considerable damage from high temperature and drought. Storage ample. Some new farm storage.

Keith J. Bilbrey, county agent, Blytheville, for north Mississippi County: Maturity maybe some later than normal. Few Wabash harvested. S-100 harvest might start this week or next. Yield may be five to eight bushels per acre less than last year. Many 100-degree days have hurt crop. Bean leaf beetles may have hurt the crop about two bushels per acre.

Illinois

Albert Dimond, Lovington, for Moultrie County (Sept. 24): Maturity week to 10 days ahead of normal, partly caused by popularity of Hawkeyes over Lincoln. Twenty percent of crop harvested. Per acre yield range 20 to 39 bushels. Total yield below 1950, down some from earlier estimates. Soybeans grading good. Moisture conditions very good. Wet spots in fields are showing up in yields now. Looks like enough storage. Fifty percent or so will be stored on farms or in elevators. For once, boxcars appear adequate but have fingers crossed.

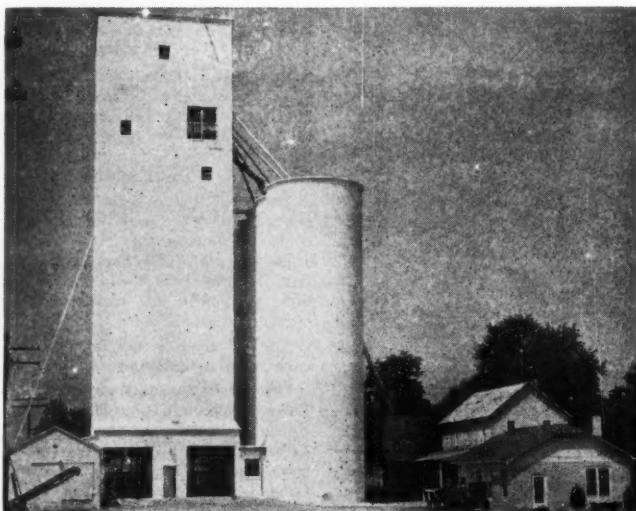
Russell S. Davis, Clayton, for west central (Sept. 25): Maturity about normal. Yield looks like good prospect, about

same as 1950 or less. Some brown stem rot and grape colapsis. Storage plentiful. Most elevators with storage have disposed of wheat so can fill with beans.

Gilbert F. Smith, Mahomet, for east central (Sept. 23): Believe maturity normal. Few machines in fields last week. Look for 20 to 30 bushels per acre. Total yield same as 1950. Few have sold part of crop but some holding back till harvest. Boxcars short. Not over 10 percent will be held on farm. Fifty percent will be stored in country elevators.

J. E. Johnson, Champaign, for Champaign and adjoining counties (Sept. 25): Maturity about one week earlier than normal on whole. Planting dates over long period making for unusually early harvest, also late harvest for last seedings. In Arcola, south Douglas, north Coles counties harvesting more than half done. For Champaign and other counties just getting good start. General opinion is 25 bushels per acre average in Champaign county. Other counties may be slightly less. For Arcola area, growers report one to two bushels less. Soybeans grading good. Most deliveries below 14 percent moisture, many down to 11 percent, even 10 percent. Weeds factor. Rasp bar cylinders handle weeds rather satisfactorily. Loss comes in carrying over of beans with weeds. Disease more prevalent than generally reported.

Newton, Ill., Elevator



—Newton Press photo by Bob Cummins.

This new 192,000-bushel elevator of the Kennedy Grain Elevator at Newton, Ill., was celebrated with a grand opening Aug. 4. There was free entertainment and movies including "The Soybean Story" and "Soybeans, the Feature Story" furnished by the American Soybean Association. The structure replaced the old elevator which was destroyed by fire last December. L. E. Kennedy is the owner.

SOYBEANS FOR BEANS*

State	Yield per acre			Production		
	Average 1940-49	1950	Ind. calcd 1951	Average 1940-49	1950	Indicated 1951
	Bushels			Thousand bushels		
N. Y.	15.3	18.0	16.0	154	108	144
N. J.	16.7	19.0	17.0	174	266	238
Pn.	15.4	17.0	16.0	559	389	240
Ohio	19.6	22.0	20.0	18,552	23,232	21,980
Ind.	18.9	22.0	23.0	25,013	35,062	36,800
Ill.	21.4	24.0	25.0	68,424	94,752	88,309
Mieh.	17.0	19.5	20.0	1,597	2,282	2,300
Wis.	14.3	14.5	16.5	497	348	330
Minn.	15.5	15.5	17.5	7,221	16,384	18,778
Iowa	19.9	22.0	21.0	30,719	42,262	33,117
Mo.	15.8	23.0	19.5	9,730	27,393	25,760
N. Dak.	11.1	14.5	17.5	486	430	378
S. Dak.	14.0	12.5	16.0	270	825	976
Nebr.	16.8	24.0	21.0	436	1,104	966
Kans.	11.7	18.0	12.5	2,050	6,462	6,325
Del.	12.7	14.0	14.0	405	644	602
Md.	18.6	16.0	16.5	479	656	908
Va.	15.2	19.0	20.0	1,277	2,527	3,080
W. Va.	13.0	13.5	13.0	14	14	13
N. C.	12.5	17.0	17.0	2,921	5,117	5,066
S. C.	8.4	12.0	11.5	132	528	621
Ga.	7.0	8.5	7.5	87	204	255
Fla.	18.0					108
Ky.	15.8	17.5	17.0	1,297	1,890	2,278
Tenn.	14.6	21.0	19.5	877	3,150	3,432
Ala.	12.6	18.0	18.0	468	1,620	2,652
Miss.	15.5	24.0	17.0	1,362	6,768	5,809
Ark.	15.3	21.0	19.0	3,596	11,676	11,020
La.	17.0	18.0	17.0	278	720	765
Okla.	8.0	17.0	15.0	60	357	675
U. S.	19.0	21.6	20.9	178,567	287,010	273,406

* Short-time average.

† USDA crop reporting board.

Brown stem rot and pod blight taking heaviest toll of yield. Marketing situation excellent. Sold beans yesterday at \$2.60. Ample storage at local elevators. Selling starting at \$2.55 or better at some points. Look for heavier storage on the whole. Some growers not expecting wide price swings of 1950. As yet, plenty of boxcars. Heavy movement hasn't started and will move rather slow. Local elevator storage preferred by most growers.

C. G. Simcox, Assumption, for south central (Aug. 24): Maturity normal. Five percent of crop harvested. Per acre yield 20 to 30 bushels, three less than earlier

estimates. Fifty days without rain, June 28 to Aug. 17. Large amount of soybeans being stored.

Robert W. Weitzer, Valley Farms, Inc., Carrollton, for west central (Sept. 26): Maturity 10 days later than normal. Per acre yield 30 to 40 bushels. Total 10 percent higher than 1950. Early beans low in moisture and clean. Late beans will be lower in quality. All early beans moving to market from field. Storage about same as last year except for increase in availability of CCC bins. As much as possible will be held if price goes down to take advantage of loan.

Indiana

Peter J. Lux, Indianapolis (Sept. 26): Maturity 10 days early. Ten percent of crop harvested. Per acre yield 23 bushels average. Soybeans are grading fine. Twenty percent more of crop will be held on farm than in 1950.

Ersel Walley, Walley Agricultural Service, Fort Wayne, for northeastern Indiana and northwestern Ohio (Sept. 25): Maturity about normal as late beans have dried up from drouth. Five percent of crop harvested. Yield somewhat disappointing, running five to seven bushels per acre less than last year. Total yield 10 percent lower than 1950. Soybeans grading very well. Serious loss due to drouth. Elevators have plenty of storage room yet and likely will have. Fifty percent will be held on farm.

K. E. Beeson, extension agronomist, Purdue University, Lafayette (Sept. 27): Maturity earlier than normal. Harvest just getting under way. State forecast of 36,800 bushels is largest crop state has had. Frost forecast in some sections for closing days of September. Stem canker showing to some extent in Hawkeye soybeans; brown stem rot present in some areas but little or no lodging. Generally soybeans are showing excellent quality.

J. B. Edmondson, Danville, for central (Sept. 25): Maturity 10 days earlier than

normal. Combining Hawkeyes started 10 days ago. Lincolns few days later. Ten to 15 percent of crop harvested. Bad weather stopped combines. Per acre yield 25 to 45 bushels. Total yield 110 to 115 percent of 1950. Very high yields reported in many cases. Green stuff in beans lowering grade in many cases. Bad blight present in varying degrees. Fields practically clear of stem canker and virus disease, which diseases took heavy toll last year. Bigger percentage will stay on farm than ever. Weeds, particularly jimson, pig weeds and corn, are factors in early harvesting. All are especially luxuriant this fall.

Iowa

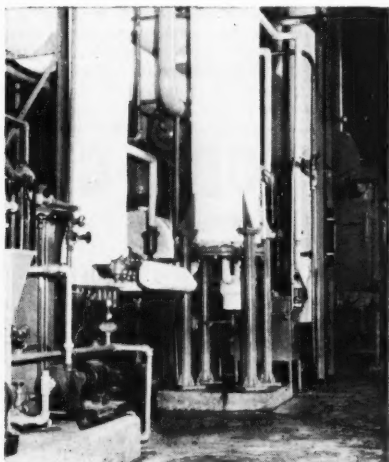
Robert R. Kalton, farm crops department, Iowa State College, Ames (Sept. 24): Maturity week to 10 days later than normal. Less than one percent harvested. Per acre yield may be slightly under last two years, but above earlier estimates if frost holds off. Slight frost injury to date. Probably more will occur. Heaviest infestation of bacterial blight ever noted in Iowa. Has come in last four or five weeks. Stem canker causing some damage in many fields. Considerable quantities will be stored on farms.

Ray J. Sand, Marcus, for area (Sept. 25): Maturity seven to 10 days late. Estimated yield 20 to 25 bushels per acre, lower than 1950. Wet weather and cool nights. Fifty percent of crop will be held on farms, 40 percent in country elevators.

O. N. LaFollette, Indianola (Sept. 22): Maturity late. Per acre yield varying from 15 bushels to normal. Total yield slightly up compared with earlier estimates if all mature. Disease damage slight.

Howard L. Rouch, Plainfield, for northeast (Sept. 22): Maturity 10 to 15 days late. Fifteen to 20 percent of crop will be left on farm. Don't believe yield will be as high as last year. Frost now will damage many beans.

Robert Overton, Rt. 2, Knoxville, for Marion County (Sept. 26): Maturity sev-



ASK ABOUT CROWN SAFE SOLVENT PROCESS FOR PROFITABLE EXTRACTION

Crown plants in various sections of the country are now producing an extremely high quality meal and prime oil. Crown plants are absolutely safe (non-explosive Trichloroethylene, is the solvent) and are inexpensive to operate. Units are adaptable to multiple construction and may be installed on location by the purchaser.

Write today for complete information. See how one of these units can benefit farmers and businessmen alike.

CROWN IRON WORKS CO.

1235 Tyler St. N.E.

Minneapolis 13, Minn.



en to 10 days late. Total yield 80 percent of last year. None harvested yet. Only a small percentage will be stored.

Kansas

G. C. Wareham, Thomson Soya Mill, Hiawatha, for northeast (Sept. 24): Maturity late. Most fields need another 30 days. Plenty of storage.

H. L. Collins, agricultural statistician, Topeka (Sept. 25): Maturity later than usual. No harvest reported to date. Per acre yield expected to be less than last year, but with larger acreage production should be almost as high as 1950. Late plantings don't look so good.

Kentucky

A. I. Reisz, Ohio Valley Soybean Co-op, Henderson, for western Kentucky and southern Indiana (Sept. 24): Maturity near normal. Harvest just started. Reports indicate per acre yield slightly below last two years, and slightly down from earlier estimates. Soybeans grading fair to good. Some green damage. Possibly one-third of crop will be held on farm.

Louisiana

W. M. Scott, Tallulah, for Louisiana Delta section (Sept. 24): Maturity of early planting normal. Later planting 10 days to 2 weeks late. Per acre average 18 to 20 bushels. Total yield 65 percent of 1950. My guess is grade will not be up to average. Some premature ripening due to drought. Fields grassy and weedy. Drought damage to 25 to 30 percent of crop. Price of \$2.46 being quoted f.o.b. cars. Twenty percent additional storage this year. From 25 to 33 1/3 percent will be held on farm.

Michigan

S. C. Hildebrand, farm crops department, Michigan State College, East Lansing (Sept. 28): Maturity normal. Only a few acres harvested. Total yield about same as 1950. Damage from brown blight.

Minnesota

John W. Evans, Montevideo, for south central (Sept. 25): Maturity not far from normal. Harvest will start next week. Some soybeans reported harvested at Dawson, 14 percent moisture. Early varieties ripening

although short. Full season varieties maturing rapidly. Total yield over earlier estimates. Ten percent increased yield over 1950. Reports of slight frost damage Sept. 24 in low spots. Forty to 50 percent of crop will be held on farm.

Clive F. Marshall, Honeycomb Products Co., Montevideo: Maturity week late but all beans in this area out of danger and well filled. Per acre yield average 20 bushels, about a bushel higher than 1950. I think more will be stored than ever before, 70 percent on farms and in elevators. Acreage will be larger than USDA figures.

R. E. Hodgson, Waseca, for south central (Sept. 24): Maturity seven to 10 days late. Total yield may be somewhat lower than earlier estimates, lower than 1950. Plant tips nipped in Albert Lea area. Seems to be plenty of storage room. Perhaps 50 percent will be held on the farm.

Missouri

O. H. Acom, Wardell, for Pemiscot County and southeast (Sept. 24): Maturity normal. Harvest just starting. Per acre yield 20 percent lower than 1950. Bean fields full of coarse weeds due to late rains. Trouble to combine. Drought and extreme hot weather damaged crop, lowering yield. Storage ample. Estimated 50 percent will be held on farm if price stays as it is now.

J. Ross Fleetwood, Columbia (Sept. 24): Maturity about normal. Five percent harvested. Per acre yield a little less than last year's crop, total 10 to 15 percent less than 1950. Soybeans grading good. More than usual will be held on farm.

New Jersey

John E. Baylor, assistant extension specialist farm crops, New Jersey College of Agriculture, New Brunswick (Sept. 24): Maturity advanced due to drought and increased percentage of row plantings. Total yield will be down 5 to 10 percent compared with earlier estimates, 5 percent below 1950. Yield will be reduced by drought in much of soybean growing region. Majority go directly to processors.

North Carolina

Latham Seed & Equipment Co., Bethav-

en, for eastern (Sept. 25): Maturity normal. Per acre yield 20 bushels. Total yield 80 percent of 1950. Worst pod shed we have ever had. Will move 70 percent of crop direct to crushers.

Irvin Morgan, Farmville, for eastern (Sept. 26): Maturity normal. None harvested. Per acre yield 15 to 20 bushels. Total yield same as 1950. Some insect damage.

North Dakota

C. J. Heltemes, agricultural statistician, Fargo (Sept. 24): Crop is practically mature. Nearly all acreage has turned color. Per acre yield should be good. Frost night of Sept. 23 probably stopped all growth but caused little damage as most of crop had turned and was nearly mature.

Ohio

G. G. Melroy, Irwin, for central (Sept. 25): Maturity 10 days early due to August drought. Two percent harvested. Per acre yield less than normal. Total yield slightly less than 1950. Few that have been combined are showing as low as 11 percent moisture and quality is good. No great damage except drought. It appears now that most growers will bin at home or take the government loan. Plenty of storage. Forty percent will be sold at time of harvest.

Lewis C. Saboe, Ohio State University, Columbus (Sept. 24): Maturity one week to 10 days early. Two percent of crop harvested. Per acre yield 19 bushels. Total yield 3 to 4 million bushels less than 1950. Quality of crop excellent. Same or even a little more of crop than last year will be held on farm.

Calvin Heilman, Kenton, for Hardin, Wyandot and Marion Counties (Sept. 26): Maturity 10 days ahead of normal. Five percent of crop harvested. Moisture 12 to 15 percent. Crop reduced by drought about 35 percent. Most beans harvested to date are Monroe. A few fields of Hawkeye about ready. Price Sept. 25, \$2.48. Sixty to 70 percent of crop will be stored.

Delphos Grain and Soya Products Co., Delphos, for northwestern (Sept. 24): Ninety percent of crop week to 10 days earlier than past few years. Mostly out of

**THOUSANDS OF
DEALERS SELL**

PRE-TESTED NOD-O-GEN

and the list continues to grow year after year. There must be a reason.

FARM LABORATORY DIVISION

THE ALBERT DICKINSON CO.,

CHICAGO 90, ILLINOIS, P. O. BOX 788

Founded 1854

NOD-O-GEN



**The Pre-Tested Inoculator
The Crop and Profit "Pepper Upper"**

serious danger from frost. Combining just starting. Many fields ready except for green weeds, especially corn. Per acre yield down four to six bushels, but reports so far better than anticipated with severe drought, from 20 to 33 bushels. Fearful of foreign material as lots of volunteer corn. If moisture permits think 25 percent may be stored on farm.

South Dakota

H. G. Miller & Son, Garden City, for east half of Clark County (Sept. 26): Maturity about 10 days late due to cool wet cloudy summer. Per acre yield about 15 to 18 bushels. Killing frost came Sept. 22. Late beans got caught with frost damage. Market price at elevators \$2.76. Storage limited as usual. Boxcars still scarce. Our acreage around 80 acres per year. Best varieties for this locality are Ottawa Mandarins, No. 507 and Wisconsin Mandarins. We tried them all for 10 years.

Virginia

Henry M. Taylor, department of agriculture (Sept. 24): Maturity week earlier than normal. Per acre yield reduced by dry weather past three weeks. Late soybeans—about 15 percent of total acreage—have been damaged by dry weather during past three weeks. Slight damage from Mexican bean beetle. Storage adequate in most counties. Some new storage space constructed since 1950.

West Virginia

Collins Veatch, associate agronomist, West Virginia University, Morgantown, for northern (Sept. 21): Maturity normal. Early varieties ripe. All hay harvested. Some damage by Mexican bean beetle.

Wisconsin

Geo. M. Briggs, Agronomy Building, Madison (Sept. 24): Maturity normal. Fields planted to adapted varieties look very promising. Blackhawk and Monroe showing up well. Leaves turning on Lincoln and Hawkeye, even north against our recommendations. Capital variety about ready to harvest.

Ontario

R. H. Peck, River Canard, for southwestern (Sept. 24): Maturity about normal. About 5 percent of crop harvested. Total yield about 135 percent of 1950 due to increased acreage and better yield. Small amount harvested grading very good. Small amount of disease damage. Storage space not sufficient but a little better than last year. Possibly 40 percent will be held on farm.

— s b d —

SURE

(Continued from page 9)
paign to teach them how to use them. That was why he decided to develop a low-cost, high-protein food which could be manufactured, canned, and sold in grocery stores. This food has food yeasts and dried milk solids as a base, supplemented with low-fat soy flour, vegetable shortening, calcium and iron salts, and vitamins. When mixed with water and processed, the product has a golden-brown

color and meaty texture. It has been used successfully both as a meat extender and a meat substitute in over 3,000 test meals among grade school students, college students, representatives of various government agencies, and civic organizations. It can be blended with ground beef, lamb, chicken, or fish and used as a meat extender; it can be used as a meat substitute in meat loaves and such dishes as spaghetti and ravioli. A patent on the food has been applied for and the Institute of Inventive Research in Texas is exploring the possibilities of merchandising it.

What sort of man is this protein-booster? As we said earlier, he's a man with a huge drive. He was born in 1891 in Lithuania, then part of Russia. His family moved to South Africa during the gold rush, and Dr. Sure tells fascinating tales of both Russia and Africa. Later the family settled in Milwaukee and he attended the University of Wisconsin. In 1920 he received his Ph.D. degree in biochemistry from that institution, and ever since he has been at the University of Arkansas. Besides membership in a number of scientific societies, he participated in the national cornmeal enrichment program, and helped pass the Arkansas flour enrichment law. In addition, he has numerous scientific articles and a number of books to his credit, all aimed at improving the nutrition of the world's people.

— s b d —

HOOVER

(Continued from page 15)
state with regard to the future trend in soybean production. Answers from North Carolina, South Carolina, Georgia, Texas, and Oklahoma, indicated that soybean production may increase in 1951 and that there was an increasing interest for the production of more soybeans in these states. The agronomists in Alabama, Kentucky, and Virginia were undecided as to the possibilities of further increases in soybean production in 1951. The agronomists consulted in Arkansas, Tennessee, and Mississippi, were of the opinion that production would be somewhat lower in these states due to the emphasis on cotton production in 1951 to meet the national goal of 16 million bales.

In spite of the information presented above it is difficult to make a sound prediction on the probable soybean production in the South in 1951. However, the evidence seems to be slightly in favor of a modest reduction in 1951 as compared with 1950, but there is reason to believe that it will be well above the 1949 level.

FUTURES DELIVERIES

Announcement has been made that the Ralston Purina soybean plant at Bloomington, Ill., has been made regular for the delivery on soybean meal futures contracts entered into on the Chicago Board of Trade.

In addition to the Ralston Purina plant just added, delivery on soybean meal futures contracts entered into on the Board of Trade may be made at the following: The Pillsbury Co., Clinton, Iowa; Archer-Daniels-Midland Co. and Spencer Kellogg Co., both at Decatur, Ill.; Central Soya Co., Gibson City, Ill.; and the Borden Co., Kankakee, Ill.



Soybean Oil Meal
Soybean Oil
Means
Quality

HEMPHILL
SOY PRODUCTS COMPANY

Processors
of Soybeans

Located in Southeast Missouri
P.O. Box 348 - Kennett, Mo.

PHONE
8-4579

LETTERS

U. S. Beans in Europe

The following letter was received by American Eastern Corp., New York City, and forwarded to the Soybean Digest. It concerns the quality of soybeans exported from the U. S. to Europe compared with Manchurian soybeans.

DEAR SIRs:

We received your letter of the 12th of September, with enclosure and we read with considerable interest the reply you received from the American Soybean Association.

We suppose you know that Holland has proved that the grading certificates issued in the U. S. are absolutely unreliable. We are of the opinion that Mr. Strayer has no right whatsoever to accuse European buyers of looking for excuses for the business which they do in Manchurian soybeans. It is a fact that Manchurian beans are of better quality than American and that there are never complaints about the quality

of Manchurian soybeans. This does not only apply to postwar business, but also to prewar trade.

It is logical that European mills are not cleaning soybeans before processing, because there is no need of cleaning soybeans of good and reliable quality.

It may interest you to learn that some time ago German mills have experienced enormous difficulties when poisonous seeds were found in shipments of American soybeans to Germany. The danger of these seeds is so big, that the German mill in question had to erect concrete walls in their warehouses, in order to separate the soybeans from other oil-seeds.

Under these circumstances we are of the opinion that it is logical that all European mills, without any exception, will do their best to buy non-poisonous Manchurian soybeans. It is only natural that the American Soybean Association is more or less jealous of the good results obtained by European mills with Manchurian soybeans.

If the U. S. wishes to hold the European market, it must first try to issue reliable grading certificates.

We cannot confirm that Europe

purchased Manchurian soybeans at about \$10 per metric ton more than the price at which American varieties could be bought, but we would be interested to receive more information on such prices. It is of course correct that Europe paid relatively high prices in sterling, but we do not believe that Europe bought Manchurian soybeans in dollars at \$10 over the price for American beans.

—N. Schrok, N. V., Amsterdam-Rotterdam-Antwerpen, Rotterdam, Holland.

Harvest Drying

TO THE EDITOR:

We regard the data on residuals presented by Dr. Ralph E. Carlyle, former Monsanto employee, (in his article on "Chemical Harvest Drying of Soybeans," page 59, Sept. 1951 Soybean Digest) as being preliminary in nature and in need of confirmation because their derivation is familiar to us. Tests for securing final data on residuals are presently under way at three locations.—F. D. Smith, assistant director, development department, organic chemicals division, Monsanto Chemical Co., St. Louis, Mo.

SOYBEAN FINANCING

CONVERT your SOYBEAN INVENTORY into WORKING CAPITAL
with

WAREHOUSE RECEIPTS issued by WILLIAM H. BANKS WAREHOUSES, INC.

These WAREHOUSE RECEIPTS, covering your inventory of SOYBEANS, MEAL and SOYBEAN OIL, stored right on your own premises, quickly furnish you with desirable collateral for your required financing from your own bank.

Write or 'phone us today for descriptive booklet.
You cannot afford to be without this information.

DIVISION OFFICES:

Des Moines, Iowa — 'Phone 3-4465
St. Louis, Mo. — 'Phone Main 5227

San Antonio, Texas — 'Phone Cath. 7317
Angola, Indiana — 'Phone 193-L

WILLIAM H. BANKS WAREHOUSES

(INC.)
Bonded

209 SO. LA SALLE ST. CHICAGO, ILL.



BANK

Field Warehouse Receipts
Bridging THE GAP Between
BANKING and INDUSTRY

INDUSTRY

1892

59 Continuous Years of Service.

1951

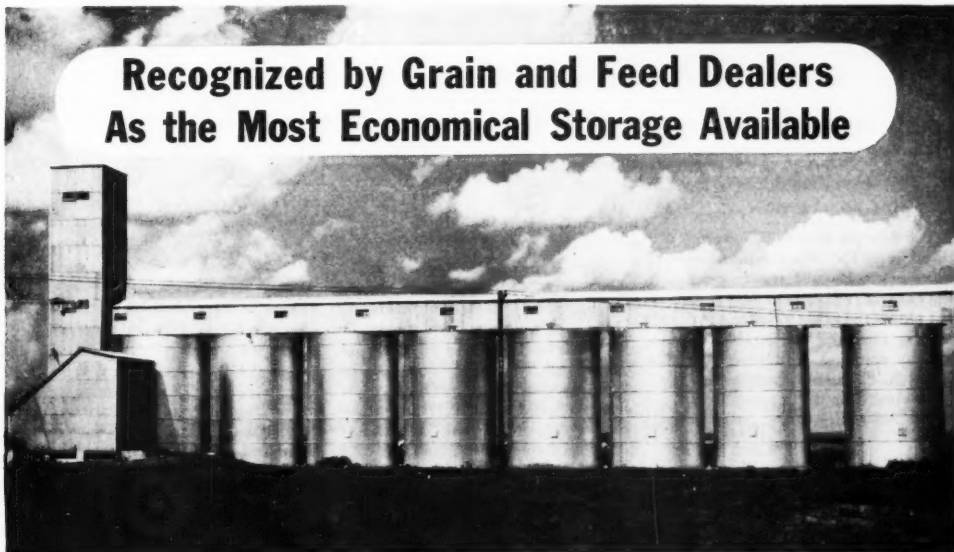
COLUMBIAN

BOLTED STEEL GRAIN STORAGE TANKS

Give You These 8 Money - Saving Advantages !

1. Minimum original investment—minimum overhead and maintenance.
2. Low cost erection due to their bolted sectional construction.
3. Fire-proof, weather-proof, rodent-proof.
4. Never crack or crumble—no caulking or patching required.
5. Actual service tests as long as 30 years prove them ideal for safe, efficient storage and handling of all small grains—wheat, corn, oats, barley, soya beans, flax, cotton seeds, peanuts, rice, coffee beans, etc.
6. Last years on end—none have ever worn out—not one has been demolished by tornado or cyclone.
7. Columbian's exclusive and important details of design continue to make these tanks superior leaders. Users invariably specify "COLUMBIAN" when additional storage is needed at their plant.
8. Easy way to erect, with detailed, easy-to-understand blue prints furnished so that tanks may be put up with any kind of labor—or we will provide supervisor for your own men—or a complete Columbian erection crew. Foundation specifications and blue prints are furnished to enable your local concrete contractor to build foundation.

**Recognized by Grain and Feed Dealers
As the Most Economical Storage Available**



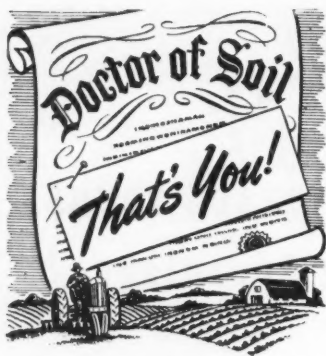
FREE ENGINEERING SERVICE—All preliminary engineering service for designing tanks to meet your particular need and arrangement is provided free.

WRITE FOR FREE LITERATURE—Send us your specifications including capacity required, arrangement of tanks, etc., for complete information.

COLUMBIAN STEEL TANK CO., P. O. Box B-4226, Kansas City, Mo.

Associate Member of the Grain and Feed Dealers National Association





And your every effort is to improve the health and productivity of your soil. You wouldn't knowingly neglect your soil. You want healthy, capacity producing soil, and only soil containing the essential mineral elements can produce maximum crops healthy in vitamin content. ES-MIN-EL contains the essential mineral elements of Copper, Boron, Manganese, Iron, Zinc and Magnesium. Soil poor in minerals cannot produce crops rich in vitamins. We have robbed our soil of minerals for years, and mineral starved land cannot give maximum production—return these minerals to your soil now. Mineralize with ES-MIN-EL—the essential mineral elements.



SOIL APPLICATION

You can now get ES-MIN-EL in spray or dust form for direct application to the plant. If your soil has not been mineralized, you can now feed your plants these essential mineral elements through the leaves and stems by spraying or dusting with ES-MIN-EL. ES-MIN-EL spray or dust is a neutral form of Copper, Manganese and Zinc.



DEMAND

That your local fertilizer dealer furnish you a fertilizer containing the essential mineral elements.

FREE BOOKLET

Send card or letter to Tennessee Corporation, Grant Building, Atlanta, Georgia or Lockland, Ohio.



TENNESSEE CORPORATION

PUBLICATIONS

Beans Processed Close to Source

The states that are the top producers of corn in the U. S. are also at the top of the list on soybeans harvested. For instance, four Cornbelt states, Illinois, Indiana, Iowa and Ohio, produced about 70 percent of the entire 1950 crop of soybeans.

But soybeans differ from corn and other grains in that nearly all of the crop passes into processing channels. Only a small part of the annual production is consumed on the farm as seed or feed. This is pointed out in a little book on soybeans just published by the Chicago Board of Trade.

During the past five years more than 80 percent of the soybean harvest was processed into oil and meal. Contrast this with corn, where only about 10 percent of the crop passes into commercial channels for processing.

The heavy movement of soybeans into processing channels naturally has been an important factor in bringing about a strong concentration of processing plants close to the areas of production. This in turn has tended to simplify the transportation and marketing of the raw commodity.

For some years there has been a consistent downward trend in the amount of soybeans carried over from one crop year to the next.

There was a carryover of 14 million bushels in 1943-44 but less than 3 million bushels in 1950-51.

There is a sharp difference in the movement of soybeans from interior shipping points into actual consuming channels as compared with the movement of wheat, corn and other grains. This is due to the closeness of the soybean processing plants to the areas of heavy production. A substantial portion of the soybean crop never does pass through what is known as a primary market. Instead it goes direct to processing centers such as Decatur, Gibson City, etc.

This results in a situation which makes the size of the receipts of soybeans at primary markets a rather poor measuring stick of the size of the crop or the amount of soybeans that might be unsold and remaining in the hands of the growers.

Though much of the soybean crop that passes into commercial channels does not come to Chicago, still the soybean futures market at the Chicago

Board of Trade is called on to absorb the hedging activities of processors, merchandisers, exporters and interior elevators throughout the country.

Futures trading was begun on the Chicago Board of Trade on Oct. 5, 1936.

The facilities for hedging provided to elevators, merchandisers, exporters and processors has enabled growers to enjoy the assurance of a continuous opportunity to market their soybeans.

Trade in crude soybean oil futures was begun on the Chicago Board of Trade July 17, 1950. And the Board of Trade recently established a futures market in soybean oil meal.

THE STORY OF SOYBEANS. SOYBEAN OIL. SOYBEAN MEAL. THEIR USES AND PRODUCTS. 36 pages. Chicago Board of Trade, Chicago, Ill.

Sesame Seed and Oil

Extensive basic and technological data on sesame seed and oil have been reported in 10 technical articles since Jan. 1950 by chemists of the Department of Agriculture. This information will be of value to oilseed processors in the Cotton Belt in the event the crop is grown on a large scale as a supplement or alternate raw material for cottonseed.

The data are the result of investigations at the Southern Regional Research Laboratory in New Orleans, La.

Sesame seed and oil are well-known commodities in international trade and quantities of both are imported into this country. But the seed has not been produced extensively here, mainly because of harvesting difficulties, some of which are being met through the development of nonshattering varieties. Under good cultural practices the crop yields 800 pounds or more seed per acre and more oil per acre than any other annual oilseed crop—per 100 pounds of seed 47 pounds of an edible oil equal or superior in quality to cottonseed and peanut oils.

Reprints of the articles may be obtained by writing the Southern Regional Research Laboratory, 2100

Robert E. Lee Blvd., New Orleans 19, La. The publications are entitled: "Sesame Oil, I-VII"; "Properties of a Solvent-Extracted Sesame Oil"; "Some Chemical and Physical Properties of the Oils from Different Varieties of Sesame Seed"; "Anti-oxidant Properties of Sesamol"; "Determination of Free and Bound Sesamol"; "The Stability of Sesame Oil"; "Determination of Sesamin"; "Optical Rotation and the Minor Components of Sesame Oil"; "The Chemical and Physiological Properties of Sesame Oil"; "Some Physical and Chemical Properties of Sesame Protein"; "Sesame—A New Oilseed Crop for the South."

Soybean Oil Flavor

When soybean oil is processed in a definite sequence of operations—degumming, distillation of a small fraction of the oil, and deodorization—it has more flavor stability and is less likely to develop off-flavors than oil processed in the conventional manner.

As revealed in patent specifications, degumming is done in the usual manner by treatment with water or an aqueous solution of a weak acid or various salts, followed by settling or centrifuging.

In the second step of the process, a fraction of the oil is vaporized and distilled in a high-vacuum still, after being degassed. Here a fraction, comprising about 5 percent of the original oil, is removed at a temperature of 230 C. and pressure of 7-8 microns. In the preferred type of still—high-vacuum, short-path centrifugal—time of exposure is only a few seconds. Material removed comprises all the free fatty acids and 65-90 percent of the tocopherols.

In the final step, oil is deodorized for 3 hr. at 185 C., followed by 2 hr. at 125 C., under a vacuum of about 10 mm. pressure while oxygen-free, superheated steam is blown through the oil. It is then cooled under vacuum to about 60 C. and packaged.

Digest from U. S. Patent 2,508,919, issued May 23, 1950, on an application dated April 20, 1946, to J. L. Jakobsen, Minneapolis, Minn., assigned to General Mills, Inc.

Amino Acids

Efficient use of protein by swine is limited by the proportions of the amino acids. Research at the Bureau of Animal Industry Station of the U. S. Department of Agriculture at Beltsville, Md., during 1950 determined the best proportions of several amino acids for growing pigs weighing less than 100 pounds. It was found that:

Lysine should constitute more than 4 percent of the protein, and isoleucine more than 2 percent. Also, 1.5 percent of methionine and 3.5 percent of isoleucine supply adequate amounts of these amino acids. Less than 1 percent of tryptophane was inadequate, but 1.4 percent was sufficient. The vitamin niacin may be substituted for the tryptophane between 1 and 1.4 percent levels.

REPORT OF THE CHIEF OF THE BUREAU OF ANIMAL INDUSTRY, AGRICULTURAL RESEARCH ADMINISTRATION, 1950, U. S. Department of Agriculture, Washington, D. C.

Soybean Protein

In work reported from Minnesota four generations of rats maintained on a purified ration containing a commercial soybean protein and DL-methionine as the only source of ami-

no acids made satisfactory gains after weaning, and the mortality after weaning was very low.

The addition of liver extract, or fish solubles or subcutaneous injection of vitamin B-12 did not increase the growth of the rats, nor did the purification of the soy proteins impair their growth promoting properties.

But rats fed this diet produced young that had a very high mortality due to acute uremia when newborn. The addition of liver extract or condensed fish solubles to the ration of the mothers greatly increased the rate of survival of the young.

Rats fed rations in which the commercial soybean protein has been extensively purified produced first litters that had a relatively low mortality. In the second litters the mortality of the young was much increased.

REPRODUCTION OF RATS FED



Think They Could Handle YOUR Order?

They're hand-picked men of the highest caliber, and direct our rapidly expanding activities in cottonseed, soybean, and packing house products.

They work with a thoroughly experienced crew trading day-in, day-out in every major market. A crew that's welded together by 50,000 miles of private wire—that never settles for second in speed or efficiency on cash market orders.

So any time you think they can help on yours—for vegetable oils or allied products—just ask.

Meanwhile you might like to see one or all of the latest reports we have related to your business:

- **Prices & Relationships**—showing relative price movements of cottonseed oil and soybean oil futures, hydrogenated shortening, and lard futures.
 - **What's The Difference — In Differentials?** . . . charting differentials for 1950 & 1951 cotton crops.
 - **Cotton Loan**—a handy guide to 1951-1952 loan values on various grades in various places.
 - **Price Supports**—tabulated details on 1951-1952 supports covering every major commodity.
 - **The Story of Soybeans**—32-page study of their uses and products.
- These pamphlets are all yours for the asking. No charge, no obligation.

If you'd like one or all, simply write—

Commodity Division

MERRILL LYNCH, PIERCE, FENNER & BEANE

Brokers in Commodities and Securities
Underwriters and Distributors of Investment Securities

70 PINE STREET

NEW YORK 5, N. Y.

Offices in 97 Cities



PURIFIED RATIONS CONTAINING SOYBEAN PROTEIN. By M. O. Schultze, division of agricultural biochemistry, University of Minnesota, St. Paul, Minn. Journal of Nutrition, Dec. 1950.

Vitamin B-12

Fish meal and related products and liver products are found to contain appreciable quantities of vitamin B-12 in studies at Cornell University.

But cereals and their byproducts contain little, if any, vitamin B-12.

STUDIES OF THE VITAMIN B-12 CONTENT OF FEEDSTUFFS AND OTHER MATERIALS. By H. T. Peeler, H. Yacowitz, C. W. Carlson, R. F. Miller, L. C. Norris and G. F. Heuser, Agricultural Experiment Station and School of Nutrition, Cornell University, Ithaca, N. Y., Journal of Nutrition, Jan. 1951.

Feeding Soybean Hay

Partial reproductive failure in the New Zealand white rabbit has been observed as a consequence of soybean hay feeding at the University of Illinois.

Studies are under way to identify the factor or factors that contributed to impaired reproduction.

STERILITY IN THE RABBIT ASSOCIATED WITH SOYBEAN HAY FEEDING. By K. A. Kendall, G. W. Salisbury and N. L. Vandemark, department of dairy science, University of Illinois, Urbana, Ill. Journal of Nutrition, Dec. 1950.

Processing Costs

A U. S. Department of Agriculture study shows wide differences between cottonseed mills in processing costs per ton, according to USDA.

The report covers individual items of cost in cottonseed processing and marketing for the 1948-49 season. It includes comparisons with costs in the preceding season, which were discussed in an earlier report. The study was made by the fats and oils branch of the Production and Marketing Administration with Research and Marketing Act funds. The PMA study was largely based on data made available by the National Cottonseed Products Association.

The report should be of particular

interest to mill operators, ginners and cotton growers in analyzing the necessary spread between prices received and paid for cottonseed and the prices paid by the consumers of mill products.

DISTRIBUTION OF MARKETING AND PROCESSING COSTS OF COTTONSEED OIL MILLS, 1948-49 COMPARED WITH 1947-48. Office of Information Services, Production and Marketing Administration, U. S. Department of Agriculture, Washington 25, D. C.

Sunflowers

Cultivated sunflowers were grown widely by the North American Indians, and the wild sunflower was also widely used by the Indians of the western U. S.

The varieties grown by the Indians were very similar to present day varieties.

THE SUNFLOWER AMONG THE NORTH AMERICAN INDIANS. By C. B. Heiser, Jr., botany department, Indiana University, Bloomington, Ind. American Journal of Botany, Oct. 1950.

it says here:

"we believe the

will dry all grain better and more efficiently than any other drier."

Thank you Mr. Vern Mendenhall of the Equity Union Grain Company!

For over a quarter of a century Shanzer Berico Grain Driers have been proving their superiority through low temperature drying with high capacity and low operating costs. As you know, there is a Shanzer Berico Grain Drier to fit every capacity need, up to 1000 bushels per hour.

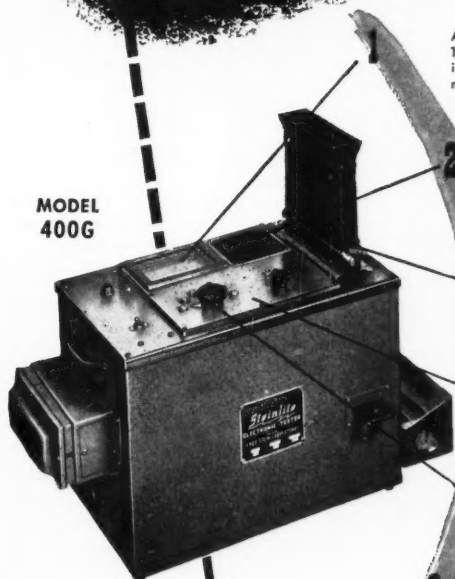
A letter or postcard will bring you complete information!

H. M. SHANZER CO. • 85 BLUXOME STREET • SAN FRANCISCO 7
GRAIN DRIERS OF ANY CAPACITY • CONVEYING MACHINERY • MAX-I-PACITY ELEVATORS

* 43 NEW OPERATING IMPROVEMENTS THAT *Save you time and money*

SEEDBURO *Steinlite* MOISTURE TESTER

MODEL
400G



1 A wider Moisture Range—
Tests from 1½% moisture
in peanuts, up to 50%
moisture in corn.

2 "Memory-refresher" instruc-
tion panel on the top en-
ables even inexperienced
workers to test grain quick-
ly.

3 Simplified funnel guides let
you easily slip the funnel
in position.

4 Stainless steel top lasts
longer, stays clean.

5 New Dial-type selector
switch speeds your meter
reading.

6 New stronger frame with-
stands rough handling.

7 New Charts check with gov-
ernment inspection points,
assure the accuracy of your
report.

8 New Voltage Stabilizer
prevents fluctuation, insures
accurate reading.

9 New Built-in thermometer
simplifies temperature
readings, saves you time.

10 Larger, easy-to-read charts
help you get an accurate
moisture analysis faster.

11 An improved dust-proof
cabinet keeps your 400G
operating accurately longer.

12 New glass meter cover is
double strength, protects
your meter from accident.

13 New gray crackle finish re-
sists chipping, scarring.

* The NEW 400G's faster operation saves you time.
The increased accuracy saves you money. The sturdier,
trouble-free design saves maintenance.

NEW CATALOG SUPPLEMENT just off our press.
Write for your copy.

WRITE TODAY for a complete descrip-
tion, send serial number of your old
Steinlite for estimated trade-in value. No
obligation, of course.

SEEDBURO

EQUIPMENT COMPANY

729 CONVERSE BUILDING CHICAGO 6, ILLINOIS



OCTOBER, 1951

GRITS and FLAKES...

FROM THE WORLD OF SOY

◆ "Job designed" cultivators are featured in a new catalog just released by the Massey-Harris Co., Racine, Wis. Printed in color, the 24-page catalog illustrates and describes the company's complete line of fast-working mounted cultivating equipment and attachments.

◆ Lou King has been appointed sales training manager for Pillsbury Mills, Inc., feed and soy division at Clinton, Iowa. He has been a field sales representative and territory manager for the company for the past four years. He succeeds Jack K. Hubbard, recently promoted to the Minneapolis headquarters of the firm.

◆ Construction is underway by Allis-Chalmers Manufacturing Co. on the first rice bran continuous solvent extraction plant in the Far East. To be located on Formosa, the 50-ton-per-day plant will be operated by the Taiwan Agricultural Chemistry Works.

◆ *Year Book and Trading Rules for 1952 has been issued by the National Soybean Processors Association. It is available for \$1 a copy at the Association's office at 3818 Board of Trade Bldg., Chicago 4, Ill.*

◆ W. Cordes Snyder, Jr., Sewickley, Pa., has been elected president and chief executive officer of Blaw-Knox Co. He has been vice president of the Koppers Co. William P. Witherow, formerly president and chairman of Blaw-Knox, will continue as chairman of the board. Chester H. Lehman will continue as vice chairman of the board and executive vice president.

◆ F. S. Washburn, member of the board of directors of American Cyanamid Co., and director of its agricultural chemicals division, has been elected president of the firm's Canadian subsidiary, North American Cyanamid, Ltd.

◆ A 12-page catalog briefly describing its entire line of magnetic separators and lifting magnets has been released by Dings Magnetic Separator Co., 4740 W. Electric Ave., Milwaukee 46, Wis.

◆ *G. W. Allen, manager of the Ohio Valley Soybean Cooperative, Henderson, Ky., who has been ill since February, has been improving steadily. He hopes to be back on the job soon.*

◆ A new oil-lubricated bearing, pedestal-mounted pump for handling chemicals, liquors, corrosive materials and solutions, hot liquids and petroleum has been announced by Allis-Chalmers Manufacturing Co., 1159 S. 70th St., Milwaukee, Wis. Ask for bulletin 52B7638.

◆ Dr. Robert W. Colby has joined the agricultural chemicals laboratory of Dow Chemical Co. and will be studying nutrition of cattle, swine and

OPEN NEW PLANT

The Midwest Burlap & Bag Co., processors and converters of used bags with home offices and plant in Des Moines, Iowa, announce the opening of their new unit at 1716 First St. North in Minneapolis, Minn.



HARRY POMERANTZ

Harry Pomerantz is in charge of the installation of the new unit.

The Minneapolis plant, like the other two company units, is completely modern, employing the newest methods and machinery to

provide a high quality converted product.

The addition of the Minneapolis plant will increase the company personnel to over 200 employees.

The president and founder of the company is Alex Pomerantz. Lou Pomerantz, his son, is secretary and treasurer. The Westville, Ill., plant is under the direction of Oscar Fischer.

Dan Masters, well known in the bag industry, is vice president in charge of sales promotion for the three plants. — s b d —

WILLIAMS TRANSFERRED

Dr. Leonard F. Williams, plant breeder for the U. S. Regional Soybean Laboratory at Urbana, Ill., has been transferred to Columbia, Mo., where he will carry on an enlarged breeding program in cooperation with the Missouri State Experiment

THE FACT STILL
REMAINS THAT
SUPERIOR ELEVATOR
CUPS

"DP" - "OK" - "CC" - "V"
are MADE STRONGER
will LAST LONGER
have
GREATER CAPACITY

and will operate more efficiently at less cost than
other elevator cups.

Write to

K. I. WILLIS CORPORATION
MOLINE, ILLINOIS

for names of distributors and analysis form No. 20



COTTONSEED MEAL
SOYBEAN OIL MEAL
PEANUT MEAL

Cake — Pellets — Cottonseed Hulls
Domestic and Export

COME TO HEADQUARTERS

THE BRODE' CORPORATION

Memphis, Tennessee

Local Phone: 38-9544 LD-471

Teletype: ME-266

On request we will mail you our frequent market bulletins.

Now see how low your truck running costs can go!

A FORD DEALER EXCLUSIVE!

This 144-page book is a record of over 5,500 cases . . . on-the-job truck running costs in over 195 kinds of truck-using businesses. It's another Ford first, and only your friendly Ford Dealer has it!



Final Ford Truck Economy Run Results are in! Owners from every state in the U.S.A. rolled up 53,783,930 miles—recorded these on-the-job running costs. Every important truck-using business participated in the 6-month Run, every size Ford Truck, every kind of road and load condition.

"My Ford Truck runs for under 2¢ a mile!"

... says Fruitgrower Harvey N. Seyfert, of Shartlesville, Pa.

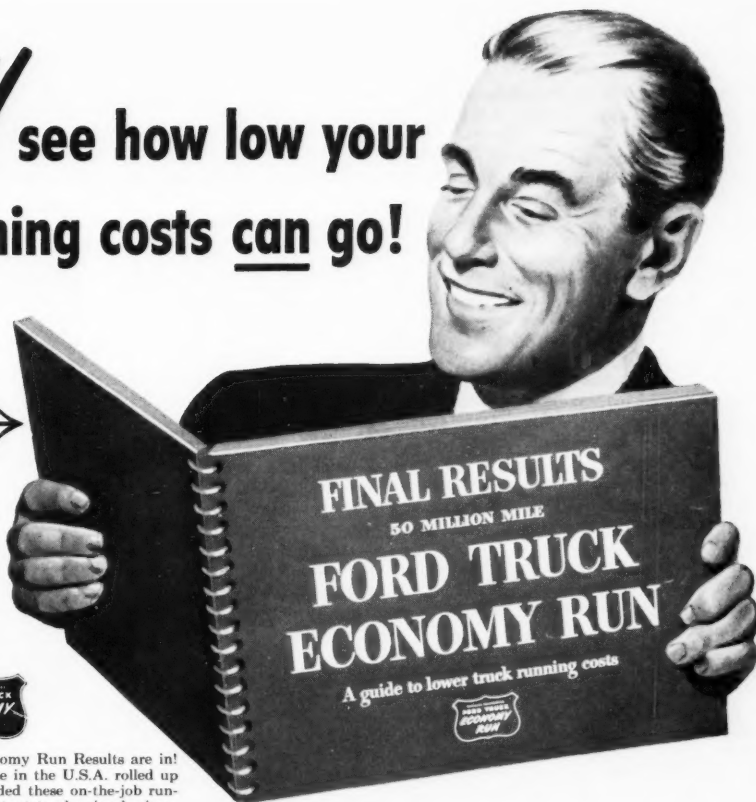
Mr. Seyfert was one of over 700 farm operators who entered the nationwide Ford Economy Run. His POWER PILOT Ford F-1 Pick-up truck traveled 2,151 miles at a cost of \$39.98 for gas, oil and maintenance, with no repairs!

You'll find his complete running cost record on page 24 in the "Final Results" book. See how your truck running costs stack up with other growers from all parts of the country who have loads and working conditions similar to yours! See evidence of Ford Truck Economy.



See "Ford Festival" starring James Melton on NBC-TV.

OCTOBER, 1951



New "Final Results" book gives black-and-white evidence of how little it can cost to run a Ford Truck in your kind of work!

Now check your truck costs against "par"! The "Final Results" book is a practical "yardstick" that lets you compare your running costs with the actual experience of other truck users in your kind of job.

See these cost-to-run figures today! There's no obligation. Your Ford Dealer will be glad to show you over 5,500 reports . . . arranged so that you can easily find cases with loads and working conditions similar to yours. See actual running costs for gasoline, oil, maintenance and repairs, paid for by actual truck operators, on actual jobs!

It may save you real money! See how important it is to have the truck *exactly* right for your job. Before you buy any truck, see written evidence of how little Ford Trucks cost to run in *your* type of business . . . in *any* type of business!

FORD TRUCKING COSTS LESS

... because Ford Trucks last longer! Using latest registration data on 7,318,000 trucks, life insurance experts prove Ford Trucks last longer!

sheep. He has been teaching and conducting research in animal nutrition at Texas A and M since 1949.

◆ Food Research Laboratories, Inc., announces that Mona Oser, chief biologist, has completed 25 years of service with the laboratories.

◆ V. D. Anderson Co., Cleveland, Ohio, announces that its field representative, John C. Lundmark, formerly of the Chicago territory, will be located at 2016 Southwood Road, Vestavia Hills, Birmingham 9, Ala., where he will be working in southern and southwestern territory. He has been with Anderson for many years as a field engineer.

◆ Clyde Hendrix was elected to the board of directors of Pillsbury Mills, Inc., at the recent stockholder meeting. Until recently, Hendrix headed the company's feed and soy division at Clinton, Iowa, and transferred to Minneapolis this summer.

◆ Construction features of Allis-Chalmers large end shield bearing squirrel-cage induction motors are described in a new bulletin, 05B7542A. Write Allis-Chalmers Manufacturing Co., 1159 S. 70th St., Milwaukee, Wis.

◆ The St. Louis bag manufacturing plant of Bemis Bro. Co. recently was awarded first prize in the interplant safety contest sponsored by the Safety Council of Greater St. Louis. The prize was in recognition of maintaining the lowest number of employee accidents per million man hours worked.

◆ Young's Bonded Granary, buyers of soybeans and grains, opened its new plant at Forrest City, Ark., Sept. 17. Plant has a capacity of 128,000 bushels complete with drier and cleaner, and a receiving capacity of 4,000 bushels an hour.

◆ Malcolm M. Darling, elevator superintendent of the soya products division of the Glidden Co., Cleveland, Ohio, has been elected president of the Society of Grain Elevator Superintendents. He has been in charge of the Glidden soya elevators in Indianapolis since their completion last year.

◆ John W. Zipoy, manager of the Minneapolis branch of Pillsbury Mills feed and soy division, has been appointed head of the feed section of the grain branch, Office of Price Stabilization. He is expected to take over the post shortly. During the war he was a member of the OPA in St. Cloud, Minn.

◆ W. D. Holland has been named production manager of American Cyanamid Co.'s agricultural chemicals division. He was formerly assistant to E. D. Powers, vice president and director of the company.

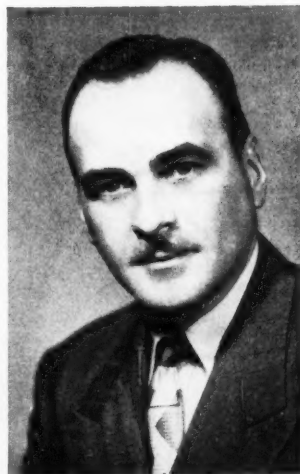
◆ Robert C. Becherer has been elected executive vice president of Link-Belt Co., with headquarters at the company's executive offices in Chicago. He has been general manager of the company's Ewart plant in Indianapolis since 1947. Richard E. Whinnery, assistant general manager at Ewart, succeeds Becherer as manager.

Station, according to J. L. Cartter, director of the Laboratory.

The vacancy in Illinois was filled Aug. 1 by Dr. Robert D. Osler who recently obtained his doctorate degree in plant breeding from the University of Minnesota.

— s b d —

OPENS NORTHERN OFFICE



DAVID P. SWAN

Industrial Machinery Co., Inc., Fort Worth, Tex. manufacturers of the "Blue Steel" screw conveyor, announces opening of its northern district office at 327 S. LaSalle St., Chicago, Ill.

David P. Swan, who has an extensive background in the grain handling and processing industry, as well as in the industrial grinding and reduction fields, will actively direct the company's sales expansion program.

Miss A. D. (Suzy) Logan will serve as Swan's assistant. Suzy is well known to members of the grain handling and processing industry.

WILBUR-ELLIS COMPANY

Brokers of Soybean Oil and Proteins
COMPLETE DOMESTIC AND FOREIGN COVERAGE

105 West Adams St., Chicago, Ill.
Telephone: ANDOVER 3-7107

New York

San Francisco

Buffalo

Los Angeles

Seattle

**THERE'S NO
POINT IN
LOOKING FOR
TROUBLE!**



**YOU GET EVERYTHING
YOU WANT OR NEED IN**

BRONOCO

Extraction Solvents

In all our 26 years of experience we haven't heard of an oil recovery problem for which we couldn't find the answer. The result has been a *continuously expanded* COMPLETE LINE of Service Proved BRONOCO EXTRACTION SOLVENTS to meet every special requirement demanded by an ever growing list of satisfied customers. YOU tell us your needs and we'll give you the solvent to do the job — better, more efficiently, more profitably.

*An experienced Bronoco Technician is at your service
— any time, any place — without obligation.*



THE R. J. BROWN COMPANY
1418 Wittenberg Ave. • St. Louis 10, Mo.

Plants in Detroit, Louisville and St. Louis. Distribution facilities in many major industrial centers

WASHINGTON DIGEST

HOLD CROPP? Washington grapevine from the field has it that farmers will be unusually slow to sell beans this fall.

Officials think 35 to 40 percent of the crop will be unsold by Jan. 1, compared to 34 percent last year, and to the long-time average of 30 percent.

As a result, country elevator storage is expected to be very tight this fall and winter in the main Midwest bean belt.

Official recognition of this soybean storage problem comes on the heels of PMA's nationwide grain storage survey, which shows total storage space inadequate, with many trouble spots.

The situation has caused PMA to take another look at its policy on tax amortization and steel allocations for public elevator construction. PMA and defense officials have been veering toward a tighter policy on granting such concessions. Now they are considering shifting to a more lenient policy as a means of encouraging—within the limits of a very tight steel supply—construction of more public elevators.

For several months PMA has been trying to put an end to further tax amortization approvals. It has also been allocating steel mostly to companies that need more in order to complete construction already started.

Any relaxation that may come in government policy toward public elevator storage will not be extended to private storage and crusher facilities. Officials are adamant on this point. They say they will not approve tax amortization or steel allocations for private storage in connection with a

crushing plant, or for converting from expeller to solvent process.

Secretary Brannan recently diverted steel set aside by NPA for processing plant and elevator construction, to allocate enough to start construction on nitrogen fertilizer plants of 250,000 tons capacity. He described it as an emergency action demanded by the urgent need of more fertilizer for upping feed grain production.

LESS FEED. Feed supplies are dwindling, and officials say the chief hope of increasing production is through more nitrogen fertilizer. Total feed grain stocks Oct. 1 are estimated at 29 million tons. A year from now stocks are expected to fall to the danger level of 20 million tons. This is the third straight year that total use has exceeded total feed grain production.

Shorter feed grain supplies will tend to bolster oil meal prices as well as feed grain prices, economists say. Within small limits, soybean meal can replace corn—and does when corn prices are high relative to meal prices.

PMA's storage survey shows roughly this: Total storage capacity of 2,774,600,000 bushels of which 1,532,000,000 bushels is in country elevators, 670,785,000 bushels is in terminal warehouses, and 544,785,000 bushels is in CCC bins.

CCC's storage building program started two years ago has resulted in new construction of 90.4 million bushels capacity. The farm storage building program resulted in farmer loans for a total capacity of 84.6 million bushels from June, 1949 to

By WAYNE DARROW

Washington Correspondent for
The Soybean Digest

June 30, 1951. In addition, outstanding farm loan commitments amount to storage (if built) of 4.1 million bushels.

During this same two year period, CCC has bought steel bins of total capacity of about 500 million bushels. Old bins on hand at the start of the program in 1949 had a capacity of about 45 million bushels.

PMA's storage capacity survey indicates that storage shortages are greater in the Midwest main soybean belt than in the U. S. as a whole.

Total country elevator and CCC bin space in the U. S. represented 32 percent of the total 1950 production of soybeans, wheat, corn, oats, barley and grain sorghums. In the Big 6 bean states of the Midwest, total storage space was 28 percent of 1950 production of the six crops.

If CCC bins are left out, total private and co-op storage was 23 percent of 1950 production of these crops in the U. S. In the six Corn-belt states, private and co-op storage represented 14 percent of these 1950 crops.

CEILINGS. OPS officials say they'll be slow in adjusting bean price ceilings at country points in relation to Chicago as long as prices don't go up much. The final draft of the new order hasn't been drawn. It will take some time after that to iron out differences with USDA.

Work is underway on new and lower ceilings of edible oil prices, and on meals. Officials don't expect to

Crude and Refined Vegetable Oils

... Our Clientele Includes Some of the Finest Names in the Industry

PHONE, WIRE, OR WRITE

ROESLING, MONROE & CO.

327 So. La Salle St., Chicago 4, Ill. Phone: Harrison 7-5244

CARL H. SMITH

GEO. K. DAHLIN

BROKERS

HUGH B. ELLSWORTH

come out with revised ceilings before early winter unless prices start climbing.

OPS plans to keep meal price ceilings in line with corn prices. The talk is to keep them on the high side. It's a fair guess that soybean meal, bulk, Decatur, won't have a ceiling much lower than \$70 a ton.

Present cottonseed oil and meal prices are roughly in line with cottonseed price support, USDA says. The estimate is on the basis of 14 1/2 cents a pound oil, and \$65 a ton meal, bulk, both at Southeast mills.

USDA market men think edible oil prices are likely to stay steady to a little up from now on. Barring unforeseen developments, they doubt cottonseed oil prices will reach 15 1/2 cents a pound unless meal prices come down. There's considerable doubt this will happen, though cottonseed meal prices are high relative to soybean meal. Most opinion leans to the side that the price adjustment will come through a price increase in soybean meal rather than a drop in cottonseed meal.

Officials are strengthened in these price views by the last Feed Situation report that shows total feed supply per animal unit has dropped to the lowest level in several years.

However, total supply of soybean and cottonseed meal is 10 percent larger than last year, with the increase in animal units up by 4 percent. Officials think this down-pull price factor will be offset by the up-trend in feeding rate of protein meals, and by the reduced total feed supply.

The government soybean price support program started in 1941. The following table shows the amount under loan each year, the farm price support rate, and the percentage that was a parity each year. The support rate for the 1951 crop of \$2.45 a bushel is 90 percent of parity as of last January 15.

	Under Support	Support Price	% of Parity
1941	148,688 bu.	\$1.05	80% of Aug. 15
1942	3,641,376 bu.	1.60	110
1943	261,317 bu.	1.80	115
1944	79,087 bu.	2.04	125
1945	31,503 bu.	2.04	123
1946	7,493 bu.	2.04	105
1947	3,526,234 bu.	2.04	90
	processor loans		
	9,450 bu.		
	farmer loans		
1948	7,099,481 bu.	2.18	90
	farmer loans		
	4,065,410 bu.		
	purchase agreement		
1949	11,273,774 bu.	2.11	90
	loans		
	4,838,611 bu.		
	purchase agreement		
1950	14,805,470 bu.	2.06	80
	(includes 238,352 purchase agreement)		

EXPORTS. Japan is coming into the bean market with orders to be filled partly now, partly later. Jap crushers are stuck with some high priced old beans, and pressured their government for some quick, new crop beans. Program calls for 30,000 tons this quarter, and 30,000 tons the first quarter of 1952.

Total U. S. bean exports to the Pacific area for 1951-52 is now estimated at 12 to 15 million bushels—360,000 to 450,000 tons. Officials still estimate total exports as high as for the last year, but they say shipments to Europe depend on those countries making financial arrangements. Quite a trickle of Manchurian beans into Europe is reported.

Congress is trying to adjourn by October 12. It seems fairly sure that it will not amend price controls, nor restore livestock slaughter quotas, nor revoke the tighter ban on imports of fats and oils. This is based on statements of House leaders who are of the opinion that the House will balk on these, even if the Senate passes them.

— s b d —

SOLVENT PLANT BY TORONTO ELEVATORS

Most modern of its kind in Canada, and incorporating a number of processing features new in Canada, a 1 million dollar solvent plant for the extraction of vegetable oil is under construction by Toronto Elevators Limited, according to an announcement by H. E. Bryant, manager of the vegetable oils department.

Located on the Toronto waterfront close to the company's grain ele-

vators, master feed plant and vegetable oils refinery, the new plant will be completed and in operation about the end of the year.

The plant, which will be used primarily for soybean oil extraction, will be the last word in design and efficiency. The crude oil produced will be pumped to the refinery for processing to meet the requirements of the paint industry.

Pioneer in the soybean industry, Toronto Elevators Limited has been actively engaged in this field since 1938.

The present Expeller plant operated by Toronto Elevators Limited will be continued in use for flax-seed crushing. The new solvent plant in addition to producing edible oils, will permit production of an increased volume of non-drying oils for the Canadian paint industry.

Market Street

We invite the readers of THE SOYBEAN DIGEST to use "MARKET STREET" for their classified advertising. If you have processing machinery, laboratory equipment, soybean seed, or other items of interest to the industry, advertise them here.

Rate: 5c per word per issue.
Minimum insertion \$1.00.

WANTED—SMALL HEXANE SOLVENT plant, 25 or more tons daily capacity. Reply Soybean Digest, Box 319p, Hudson, Iowa.

FOR SALE — OIL MILL EQUIPMENT Anderson Expellers, French Screw Presses all models, as is or rebuilt for specific materials. Pittcock and Associates, Glen Riddle, Penna.

NOW!

3 PLANTS
TO SERVE
YOU!

DES MOINES, IOWA
MINNEAPOLIS, MINN.
WESTVILLE, ILL.



1716 First St. N.
Minneapolis, Minn.
Phone JUN - 4638

YOUR USED BAGS

have cash value

You can get spot cash for your used and surplus burlap and cotton bags. Our buyers are in your vicinity regularly and are authorized to give you spot quotations and cash for your used bags.

TOP QUALITY RECONDITIONED BAGS

Thousands of satisfied customers in the Central States depend upon us for high quality reconditioned bags at economy prices.

BAG PRINTING IN COLORS

Your own label or we submit ideas and sketches

MIDWEST

BURLAP & BAG COMPANY

213 THIRD • PHONE 2-8355 • DES MOINES, IOWA

PROCESSORS AND CONVERTERS OF USED BAGS

North State St.
Westville, Ill.
Phone 7031

Still THE Only MOISTURE TESTER

That:

- Gives direct moisture percentage readings on a dial, instantly.
- Automatically indicates temperature of sample and eliminates need of a separate t.st.
- Operates electrically, yet requires no electrical outlets or batteries.

The sensational



UNIVERSAL MOISTURE TESTER

for grain, seed, feed and flour, is consistently accurate; thoroughly dependable; entirely portable, and is fully

**GUARANTEED FOR
3 YEARS**

No maintenance expense. Available for a
10 DAY FREE TRIAL

FOR THE SMARTEST
BUYS IN

**ALL TYPES
OF
EQUIPMENT**

consult the big, Burrows
catalog. Yours free upon
request.

BURROWS
EQUIPMENT COMPANY

1316D Sherman Ave.

Evanston, Ill.



SAVES UP TO \$1.00 A TON IN SACKING COSTS, TOO!

A strong, neat seam is a sign of long life in cotton or burlap bags. And only Western has the famous NU-SEME process that converts top-quality used bags into attractive, like-new bags with the strongest seam possible! You'll be saving yourself up to \$1.00 a ton in sacking costs, too.

WESTERN-MADE NEW BAGS:

Burlap—Strong, durable. Individually inspected.

Cotton—Highest quality at lowest prices.



IN THE MARKETS

Meal Presses Ceiling

September was featured by a squeeze on cash meal as old crop meal left the market and little new crop meal was being offered as yet.

After the 11th of the month both 41% and 44% soybean oil meals hit the \$74 ceiling where they remained for the balance of the month. This was a new high for the current season.

Production of 44% meal was normal but there was a scramble for the limited nearby shipments as the trade feared that enough new crop meal would not come to market in September to meet demand.

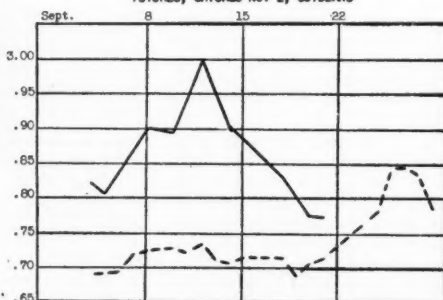
The soybean harvest began in mid-September in southern Illinois and southern Indiana and some new meal began to arrive at the market, but not in large volume. Offerings remained slim. Wet weather delayed harvest over much of the soy belt.

September soybeans lost ground after pushing up to \$3 the 11th of the month. November beans were generally strong for the month. Lack of good harvest weather strengthened the market.

Bearish influences were the large cotton crop and expected large supply of vegetable oils during the coming year. At midmonth enough soybeans came out of hiding to meet the urgent demand for spot soybeans.

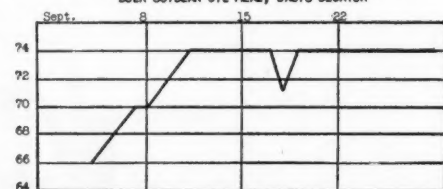
Soybean and other vegetable oils were generally weak but the price range was not great. There was little spread between soybean, cottonseed and coconut oils.

FUTURES, CHICAGO NO. 2, SOYBEANS



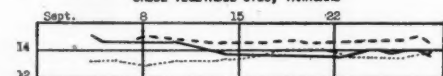
Dollars per bushel — September — November

BULK SOYBEAN OIL MEAL, BASIS DECATUR



Dollars per ton, 44%

CRUDE VEGETABLE OILS, TANKCARS



Cents per pound — Soybean — Cottonseed — Coconut

SOYBEAN DIGEST

September No. 2 soybeans at Chicago opened for the month at \$2.84 $\frac{1}{4}$, and closed at \$2.77 $\frac{1}{2}$, the low. Sept. 21. High was \$3 Sept. 12.

November No. 2 soybeans opened at \$2.69 and closed at \$2.78 $\frac{1}{2}$. High was \$2.83 $\frac{3}{4}$ Oct. 26.

Bulk soybean oil meal opened at \$66 and closed for the month at \$74, the ceiling.

Crude soybean oil opened at 15c, the high, and closed at 13 $\frac{3}{4}$ c, the low.

MEMPHIS SOYBEAN OIL MEAL FUTURES SEPT. 29*

Bulk—Decatur (Contract 100 tons)

Oct., flat 65.95; Dec., 60.70¢/60.95; Jan., 60.60¢/61.00; Mar., 60.75¢/61.25; May, 61.70¢/62.00; July, 61.75¢/62.00.

CHICAGO SOYBEAN OIL MEAL FUTURES CLOSE SEPT. 29*

Nov., 61.00b-50a; Dec., 61.00b-50a; Jan., 61.00b-50a; Mar., 61.00b-50a; May, 61.80; July, 61.90.

NEW YORK SOYBEAN OIL FUTURES CLOSINGS SEPT. 29*

New Contract

Closings: Oct., 13.60b; Nov., 13.50b; Dec., 13.50b; Jan., '52, 13.50b; March, 13.60b; May, 13.63b; July, 13.60b; Sept., 13.40b; Oct., 13.40a. No sales.

CHICAGO SOYBEAN OIL FUTURES CLOSINGS SEPT. 29*

Oct., 13.65b-75a; Nov., 13.60b-75a; Dec., 13.62b-70a; Jan., 13.65b-75a; Mar., 13.70b-75a; May, 13.70b-75a; July, 13.70b-75a. a-asked; b-bid.

*Reported by the Chicago edition of Wall Street Journal.

FUTURES TRADING AND OPEN CONTRACTS IN SOYBEAN OIL MEAL ON MEMPHIS MERCHANTS EXCHANGE CLEARING ASSOCIATION (TONS)

	Volume of trading	Open contracts		Volume of trading	Open contracts
Aug. 28	3,300	140,900	Sept. 12	6,600	177,200
Aug. 29	5,000	140,600	Sept. 13	5,000	178,300
Aug. 30	5,800	143,200	Sept. 14	7,600	179,800
Aug. 31	12,400	148,500	Sept. 15	2,900	179,000
Sept. 4	5,600	152,700	Sept. 19	12,000	176,300
Sept. 5	7,300	153,300	Sept. 20	11,300	173,600
Sept. 6	10,600	159,000	Sept. 21	6,500	177,800
Sept. 7	16,100	167,100	Sept. 22	9,300	184,900
Sept. 8	6,800	169,800	Sept. 24	10,800	184,800
Sept. 10	5,000	171,900	Sept. 25	22,200	185,000
Sept. 11	10,200	173,700	Sept. 26	14,600	

Total for 22 days reported 196,900

● **USAGE OF SOYBEAN OIL.** Factory production of crude soybean oil totaled 176,357,000 lbs. in July compared with 176,839,000 lbs. in June, reports Bureau of the Census. Factory production of the refined oil totaled 120,792,000 lbs. in July; 139,124,000 lbs. in June.

Factory consumption of crude soybean oil in July was 130,592,000 lbs.; in June, 149,883,000 lbs. Factory consumption of refined soybean oil in July was 116,315,000 lbs.; in June, 134,597,000 lbs.

Factory and warehouse stocks of crude soybean oil totaled 116,683,000 lbs. July 31; 107,583,000 lbs. June 30. Stocks of refined soybean oil were 95,343,000 lbs. July 31; 113,715,000 lbs. June 30.

Usage of crude soybean oil in July: soap 124,000

PRESERVE YOUR DIGESTS WITH MICROFILM SAVE SPACE!

You can now obtain microfilm copies of all issues of the Soybean Digest at **minimum cost**.

Keep a complete file or a single issue. Little storage space required!

Write

UNIVERSITY MICROFILMS
313 N. First St., Ann Arbor, Mich.

JONES-HETTELSATER CONSTRUCTION CO.

31 YEARS as
Designers and Builders

★
FLOUR MILLS
ELEVATORS

★
FEED & SOYBEAN PLANTS

1911 Baltimore Ave.
KANSAS CITY 8, MISSOURI

TABOR
GRAIN AND FEED CO.

GRAIN

FEED

SPECIALIZING IN
COUNTRY RUN

WRITE, WIRE
OR PHONE
(2151-2161)

SPECIALIZING IN

GRAINS....

MILL FEEDS

CORN.....

HOMINY FEED

SOYBEANS..

LINSEED MEAL

OATS.....

SOYBEAN MEAL

WHEAT.....

BREWER'S GRAIN

TABOR GRAIN & FEED CO., SULLIVAN, ILL.

MARIANNA SALES COMPANY

MEMPHIS 1, TENN.

Dealers in
**Soybean and Cottonseed
Products**

Brokers in
**Soybean and Cottonseed
Meal Futures**

Members

Memphis Merchants Exchange
American Feed Manufacturers Association
Tel. 55707 L. D. 364



Mendable, cleanable and reusable
Easy and quick to handle and stack
No breakage, no loss—dependable
Tear-resistant, safe and durable
Economical in storage space needed

Burlap or Cotton . . .

New or Used . . .

Printed or Plain . . .

Write, wire or phone for latest quotations

MENTE & CO., INC.

Dept. T
Isaac T. Rhea, Pres.
SAVANNAH • NEW ORLEANS • HOUSTON

TEXTILE BAG SPECIALISTS SINCE 1895

lbs.; paint and varnish 219,000 lbs.; paints and lubricants 23,000 lbs.; other inedible products 871,000 lbs.

Usage of refined soybean oil in July: shortening 22-120,000 lbs.; margarine 3,493,000 lbs.; other edible products 8,855,000 lbs.; paint and varnish 4,668,000 lbs.; lubricants and greases 7,000 lbs.; other inedible products 6,077,000 lbs.

Usage of hydrogenated edible soybean oil in July included: shortening 16,730,000 lbs.; margarine 28-216,000 lbs.; other edible products 535,000 lbs.; inedible products 5,000 lbs.

● **PROCESSING OPERATIONS.** Reported by Bureau of Census, Department of Commerce, for June, July.

PRIMARY PRODUCTS EXCEPT CRUDE OIL, AT CRUDE OIL MILL LOCATIONS: PRODUCTION, SHIPMENTS AND TRANSFERS AND STOCKS, JULY 1951—JUNE 1951

Products:	Production		Shipments and transfers		End of month stocks	
	July 1951	June 1951	July 1951	June 1951	July 31, 1951	June 30, 1951
Soybean:						
Cake and meal†	411,813	*416,759	452,635	*447,795	108,550	148,772
Leithin†	1,641,110	1,894,716	1,379,699	1,775,752	1,385,496	1,124,085
Edible soy flour,						
full fat‡	405	(1)	417	(1)	287	299
Edible soy flour,						
other‡	2,721	3,280	3,093	3,432	956	1,238
Industrial soy flour‡	1,835	1,775	1,907	1,805	341	413

* Revised. (1) Not shown to avoid disclosure of individual operations. † Unit of measure in tons. ‡ Unit of measure in pounds.

SOYBEANS: RECEIPTS, CRUSHING AND STOCKS AT OIL MILLS, BY STATES, JULY 1951—JUNE 1951 (Tons of 2,000 pounds)

State	Receipts at mills		Crushed or used		Stocks at mills	
	July 1951	June 1951	July 1951	June 1951	July 31, 1951	June 30, 1951
U. S.	212,914	270,512	532,757	535,263	681,172	1,001,915
Arkansas	(*)	(*)	8,390	11,376	11,117	19,651
Illinois	108,484	128,799	234,136	226,087	249,911	366,563
Indiana	(*)	22,235	46,280	46,317	(*)	91,190
Iowa	31,108	51,716	81,740	86,179	110,728	161,360
Kansas	3,398	8,145	8,253	7,395	5,963	10,618
Kentucky	(*)	(*)	10,644	16,116	(*)	28,920
Minnesota	15,802	20,744	23,606	25,444	20,784	28,588
Missouri	(*)	(*)	15,947	18,990	31,576	(*)
Nebraska	(*)	(*)	4,630	4,868	(*)	(*)
N. Carolina	(*)	(*)	(*)	1,707	5,952	(*)
Ohio	17,703	29,415	57,726	60,458	115,398	155,331
Oklahoma	(*)	(*)	(*)	(*)	(*)	(*)
Texas	(*)	(*)	(*)	(*)	(*)	(*)
All other	36,363	9,458	42,305	30,416	139,733	138,794

† Receipts exceeded by reshipments of beans previously received and held in the State. U. S. receipts are on a net basis, excluding transfers between mills. * Included in "All other" to avoid disclosure of individual operations.

SOYBEAN PRODUCTS: PRODUCTION AND STOCKS AT OIL MILL LOCATIONS, BY STATES, JULY 1951—JUNE 1951

State	Crude oil (thousand pounds)				Cake and meal (tons)			
	Production	Stocks	Production	Stocks	Production	Stocks	Production	Stocks
	July 1951	June 1951	July 31, 1951	June 30, 1951	July 1951	June 1951	July 31, 1951	June 30, 1951
U. S.	176,357	176,839	47,664	38,562	411,813	*416,759	108,550	148,772
Arkansas	2,419	3,316	752	517	6,762	9,226	1,856	3,619
Illinois	80,637	77,793	15,425	12,137	174,632	172,819	44,629	53,877
Indiana	15,363	15,204	2,799	1,862	36,254	35,837	(*)	(*)
Iowa	26,703	27,669	7,389	7,422	66,550	69,966	10,737	15,789
Kansas	2,638	2,414	2,851	1,414	6,212	6,164	(*)	5,657
Kentucky	3,884	5,459	875	(*)	8,380	12,105	996	1,143
Minnesota	7,485	8,065	4,081	2,566	19,008	19,446	(*)	(*)
Missouri	4,616	5,897	1,272	1,363	11,944	15,812	2,569	2,752
Nebraska	1,402	1,464	465	420	3,890	34,019	(*)	(*)
N. Car.	(*)	540	444	220	(*)	1,439	7,285	10,946
Ohio	18,468	19,576	5,266	4,887	45,816	45,910	2,258	2,282
Oklahoma	(*)	(*)	(*)	(*)	(*)	325	1,389	(*)
Texas	(*)	(*)	(*)	(*)	(*)	(*)	1,289	1,725
All other	12,742	9,532	6,945	5,754	32,965	124,916	36,486	49,593

† Revised. (*) Included in "All other" to avoid disclosure of individual operations. Prepared by Bureau of the Census, Industry Division, Chemicals and Wood Products Section.

SOYBEAN DIGEST

● **RECEIPTS.** Soybean receipts dropped sharply in July and were the smallest since 1947, according to reports to the Department of Agriculture. Inspected receipts totaled 2,603 cars in July compared with 4,801 in June and 3,036 cars in July 1950. Inspected receipts for October through July amounted to 117,500 cars this season compared with 94,544 cars the same months last season.

The quality of the soybeans marketed in July was a little lower than in June, 82 percent grading No. 2 or better compared with 85 percent in June, 73 percent in July 1950 and 70 percent the 10-year July average.

Inspections of soybeans in July included the equivalent of 176 cars inspected as cargo lots and truck receipts equal to 136 cars.

Inspected receipts of soybeans dropped in August 1951 as country stocks dwindled but were somewhat above August last year, reports to the Department of Agriculture indicate. Inspections totaled 1,895 cars in August compared with 1,339 in August 1950 and 4,213 cars in August 1949. Inspected receipts for October through August this season amounted to 119,395 cars compared with 95,883 cars for the same months last season.

The quality of the soybeans marketed in August was somewhat lower than the previous months, 75 percent grading No. 2 or better compared with 82 percent in July and 73 percent in August 1950.

Inspections of soybeans in August included the equivalent of 116 cars inspected as cargo lots and truck receipts equal to about 22 cars.

● **EXPORTS.** U. S. exports of soybeans and soybean oil for July, as reported by the Office of Foreign

Agricultural Relations, U. S. Department of Agriculture:

Soybeans	1,261,070 bu.
Soybean oil (crude)	28,648,401 lbs.
Soybean oil (refined)	18,998,228 lbs.
Converted to a soybean equivalent basis, the exports for July amounted to 6,249,467 bushels of beans.	

● **SOYBEAN GLUE.** Consumption of soybean glue by the plywood industry in May was 5,214,000 lbs. compared to 5,212,000 lbs. in April and 4,162,000 lbs. in May 1950, reports Bureau of the Census.

Consumption of phenolic resin glue in May was 2,599,000 lbs.; and of all glues 3,741,000 lbs.

Stocks of soybean glue May 31 totaled 3,082,000 lbs. compared with 3,165,000 lbs. Apr. 30, and 4,034,000 lbs. May 31, 1951.

Consumption of soybean glue in June was 5,302,000 lbs. compared with 4,261,000 lbs. in June 1950.

Consumption of phenolic resin glue in June was 2,593,000 lbs.; and of all glues 3,811,000 lbs.

Stocks of soybean glue June 30 totaled 2,709,000 lbs.

● **SEED IMPORTS.** Soybean seed admitted into the U. S. under the federal seed act during the year July 1, 1950, to June 30, 1951, totaled 13,400 lbs. compared with 160,500 lbs. the year previous, reports Production and Marketing Administration.

All the seed imported was from Canada.

● **SHORTENING.** Standard shortening shipments reported by the Institute of Shortening and Edible Oils, Inc., in pounds.

Week ending Sept. 1	5,069,776
Week ending Sept. 8	4,679,850
Week ending Sept. 15	5,449,311
Week ending Sept. 22	5,795,734

To Our Many Friends in the Soybean Industry



and members of the American Soybean Association we extend our best wishes for a continuing history of growth and achievement in the production and use of soybeans.

You can depend on Cypress Brand Soybeans to be the highest quality seed available. Suitable varieties are available for the discriminating grower from North to South.



Please Address All Correspondence To

CYPRESS LAND FARMS CO.

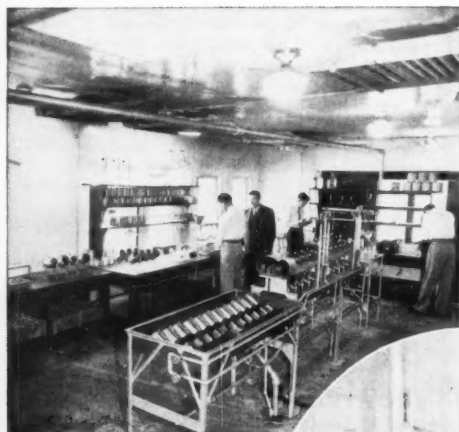
314 MERCHANTS EXCHANGE BLDG.

ST. LOUIS 2, MO.

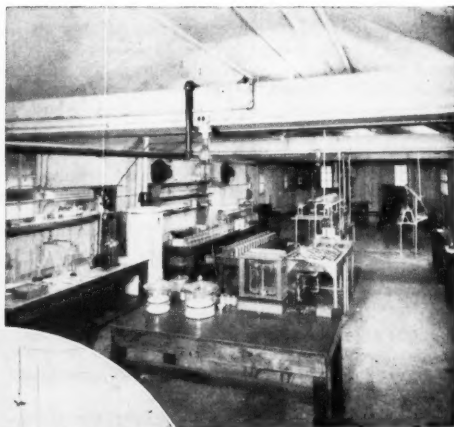
MEMBER: MERCHANTS EXCHANGE, ST. LOUIS, MISSOURI

MILLS — SEND US YOUR INQUIRIES FOR OIL BEANS.

Serving The Soybean Industry



The Decatur, Ill., laboratory is equipped with the most modern equipment for refining soybean oils.



The Des Moines, Iowa, laboratory with all the latest equipment for refining oils.



The Oil Refining Department at the Memphis, Tenn., laboratory, with a capacity of 150 raffinings daily.

6

Chemical Laboratories
to serve you.

- Decatur, Ill.
- Des Moines, Iowa
- Memphis, Tenn.
- Little Rock, Ark.
- Blytheville, Ark.
- Cairo, Ill.

WOODSON-TENENT LABORATORIES

Official Chemists for the Chicago Board of Trade

MAIN OFFICES: 265 SOUTH FRONT ST.

MEMPHIS, TENN.

SPECIALIZING IN SOYBEAN OILS — CAKE — MEALS — FEEDS

"Over ONE BILLION dollars worth of products analyzed since 1935."

3: answers

to your
extraction
solvent
problems

SERVICE IN 48 STATES

Don't Inquiries Invited

AMERICAN MINERAL SPIRITS COMPANY

CHICAGO, NEW YORK, LOS ANGELES

ATLANTA • BOSTON • BUFFALO • CARTERET, N. J.
CINCINNATI • CLEVELAND • CORPUS CHRISTI
DETROIT • FORT WAYNE • GRAND RAPIDS • HOUSTON
INDIANAPOLIS • KEARNY, N. J. • MILWAUKEE
NEW ORLEANS • PHILADELPHIA • PROVIDENCE
SAN FRANCISCO • ST. LOUIS • TOLEDO
TORONTO, CANADA • MONTREAL, CANADA

When you have a solvent problem, ask yourself:

1 Who has the experience and know-how to give quick, expert assistance?

Amsco—over 25 years of it. For more than a quarter century Amsco has been tackling knotty solvent problems and coming up with the right answers.

2 Who has the most complete line of petroleum-base solvents available?

Amsco. Every one, from oldest to newest, must measure up to Amsco's reputation for uniform high quality that costs no more.

Though Amsco stands ready to enter a new solvent specifically to your needs, almost all are one already developed will fill the bill perfectly. For Amsco solvents offer—

- high, fast rate of extraction
- low solvent losses due to close distillation
- high initial boiling point and low dry point
- freedom from objectionable residue and odor

3 Who can deliver what I want, when and where I want it?

Amsco. No matter where you are, prompt attention will be given every detail of your instructions. Amsco gives dependable service in all 48 states from strategically located refineries and bulk plants.

We'd like to tell you more about Amsco products and services. Amsco "Service that goes beyond the sale." If you'd like to know what they can do for you, fill in the coupon today.

The most complete line of petroleum-base solvents available

Amsco products constitute the widest variety of petroleum solvents available. Every one of them, from the oldest to the newest, must measure up to the company's 25-year reputation—a reputation for uniform high quality, for prompt service, and for an eagerness to develop new products to meet industry's ever-changing demands.

Better Solvents
mean
Better Products



Experience Is a Sure Teacher!

SKELLYSOLVE FOR ANIMAL AND VEGETABLE OIL EXTRACTION

Applications

SKELLYSOLVE B. Making edible oils and meals from soybeans, corn germs, coconuts, peanuts, cottonseed and the like.

SKELLYSOLVE C. Making both edible and inedible oils and meals, particularly where lower volatility than that of Skellysolve B is desired because of warm condenser water.

SKELLYSOLVE D. Quality solvent at competitive prices. For degreasing meat scraps, extracting oil-saturated fuller's earth, general extraction uses.

SKELLYSOLVE F. Extracting cottonseed meals and other products in laboratory analytical work. Originally made to conform to A.O.C.S. specifications for petroleum ether, and for pharmaceutical extractions where finest quality solvent is desired.

SKELLYSOLVE H. Making edible and inedible oils and meals where greater volatility is desired than that of Skellysolve C or D.

"DOC" MacGEE SAYS: Some skills are hard to come by . . . can only be won by years of painstaking effort. Skellysolve has just such a background.

Years of experience in serving the solvent needs of firms making both edible and inedible oils and meals . . . and other industries processing a wide variety of oleaginous materials . . . prove the complete satisfactoriness of Skellysolve.

You can depend on Skellysolve having the quality you demand . . . batch after batch. Depend on it for close boiling ranges . . . low order of toxicity . . . low sulphur content . . . sweet odor . . . fast vaporization from oils and meals. Depend on Skellysolve, too, for low end

points . . . low solvent losses . . . a minimum of excessively volatile compounds . . . and a minimum of unsaturates and pyrogenic decomposition products.

Dependability in supply is another good reason for standardizing on Skellysolve for your solvent needs. Skelly Oil Company has what it takes in raw materials and in manufacturing facilities to keep you supplied year after year with the same high-quality solvents.

If you have a solvent problem that demands special study, you are invited to consult with our Skellysolve Technical Fieldmen. Write for more detailed information.



Skellysolve

SOLVENTS DIVISION, SKELLY OIL COMPANY
KANSAS CITY, MISSOURI